

Murray Brothers Tarmacadam Ltd

ARDCAHAN QUARRY SUBSTITUTE
CONSENT

VOLUME I
NON-TECHNICAL SUMMARY

February 2026

Non-Technical Summary

Contents

1	Introduction to EIAR.....	2
2	Planning Policy Framework.....	6
3	Project Location and Description.....	7
4	Alternatives Considered.....	9
5	Population and Human Health.....	10
6	Land, Soils and Geology	13
7	Hydrology and Hydrogeology	14
8	Air Quality	17
9	Climate	18
10	Noise and Vibration	19
11	Landscape and Visual Impact.....	22
12	Traffic and Transportation	24
13	Material Assets – Services, Infrastructure and Utilities.....	25
14	Biodiversity	27
15	Cultural Heritage and Archaeology.....	29
16	Significant Interactions of Impacts	30
17	Schedule of Mitigation/Remediation and Monitoring.....	31

Figures

Figure 3-1	Site context with regard to surrounding area	7
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Tables

Table 1-1	Ardcahan Quarry rEIAR: List of Consultants and Responsibility	3
Table 10-1	Summary of noise generating activities onsite.....	20

1 Introduction to EIAR

1.1 Introduction

This remedial Environmental Impact Assessment Report (hereinafter referred to as the rEIAR) has been prepared to accompany an application to An Coimisiún Pleanála (ACP) for Substitute Consent for development at Ardcahan Quarry, Dunmanway, Co. Cork.

The development comprises quarrying that took place between 1990 (when the EIA Directive came into force) and 2014 (when quarrying ceased).

This NTS provides a concise and comprehensive summary of the assessments carried out, description of the development, the baseline environment, the effects of the project on the environment, any proposed mitigation/remediation measures and proposed monitoring arrangements, where relevant.

Please note that a remedial Natura Impact Statement (rNIS) has also been prepared and accompanies this application under separate cover.

1.2 Scope of the rEIAR

In accordance with Section 177(F)(1), this rEIAR presents details regarding the environmental impacts arising from the former quarrying activity for which Substitute Consent is sought, with a focus on significant effects which have either occurred, are occurring or which can reasonably be expected to occur. It also includes details of proposed remedial measures intended to mitigate adverse effects and a timeframe for implementation.

As required under Article 3 of the EIA Directive and referred to in Section 177E (4A)(a) of the 2000 Planning and Development Act, as amended (PDA), this rEIAR presents details of both the direct and indirect significant effects on the environment.

Having regard to the relevant statutory provisions for remedial environmental impact assessment reports, the evaluation of likely significant effects takes into account:

- Effects which ‘have occurred’

The relevant period for consideration of effects that ‘have occurred’ is from the transposition of the EIA Directive into Irish Law in February 1990 to the present. Within this period, the existing macadam plant became operational (1999) and so consideration of the associated cumulative impacts is factored into the assessment where relevant.

- Effects which ‘are occurring’

This aspect of the assessment considers effects arising from the former quarrying activities that are currently being experienced. The assessment of likely significant effects that ‘are occurring’ is based on a description of the relevant aspects of the existing present-day environment at Ardcahan Quarry and the surrounding area, informed by site visits and environmental surveys, where appropriate. Where relevant, the assessment includes consideration of cumulative impacts associated with the existing macadam plant which remains operational.

- Effects which ‘can reasonably be expected to occur’

Assessment of the likely significant effects of the former quarrying activities that ‘can reasonably be expected to occur’ includes consideration of cumulative impacts, where relevant to individual environmental factors, of continued operation of the existing macadam plant and the potential effects

that may arise if the development subject of the concurrent Section 37L application is granted permission.

1.3 Design Team and Competency

It is a requirement that the rEIAR must be prepared by competent experts. Information on the competency of the relevant consultant is provided at the start of each chapter. rEIAR Co-Ordinator and Study Team. McCutcheon Halley Planning Consultants (MH Planning) are the planning consultants and project co-ordinators of the rEIAR. The rEIAR structure and consultant responsible for each of the chapters is set out in Table 1.1.

Table 1-1 Ardcahan Quarry rEIAR: List of Consultants and Responsibility

Consultant	Chapters prepared
McCutcheon Halley Planning, 6 Joyce House, Barrack Square, Ballincollig, Cork. Tel: (021) 4208710 e-mail: info@mhplanning.ie	Chapter 1 Introduction (inc. Screening for Major Accidents) Chapter 2 Planning Policy Framework Chapter 3 Project Location and Description Chapter 4 Alternatives Considered Chapter 5 Population and Human Health Chapter 13 Material Assets: Services, Infrastructure, Waste and Utilities Chapter 16 Significant Interactions Chapter 17 Summary of Mitigation and Monitoring
Viridus Consulting Ltd 087 6503582 e-mail: Darragh.musgrave@viridus.ie	Chapter 6 Land, Soils and Geology
	Chapter 7 Hydrology and Hydrogeology
AWN Consulting, The Tecpro Building, Clonshaugh Business & Technology Park, Dublin 17, Ireland. Tel: 353(0)1 8474220 e-mail: info@awnconsulting.com	Chapter 8 Air Quality Chapter 9 Climate
CLV Consulting, The NSC Campus, Mahon, Cork, Ireland. Tel: 021 242 8704 email: info@clvconsulting.ie	Chapter 10 Noise and Vibration
Cathal O'Meara Landscape Architects 087 9202549 e-mail: Cathal@cathalomeara.com www.cathalomeara.com	Chapter 11 Landscape and Visual Impact
MHL Consulting Engineers 021 484 0214 087 279 0851 e-mail: smoriarty@mhl.ie	Chapter 12 Traffic and Transport
Malone O'Regan Environmental Office 423, Horgan's Quay, Waterfront Square, Cork, T23 PPT8 Tel: 021 2340523 e-mail: info@mores.ie	Chapter 14 Biodiversity
	Remedial Natura Impact Statement

1.4 rEIAR Report Structure

This rEIAR has been prepared according to the 'Grouped Format Structure.' This means that each topic is considered as a separate section and is drafted by relevant specialists.

The rEIAR is divided into three Volumes as follows:

- Volume 1:** Non-Technical Summary
- Volume II:** Remedial Environmental Impact Assessment Report
- Volume III:** Appendices

1.5 Study Area

A study area has been defined for each environmental topic to inform the related technical assessments. This study area has been determined by reference to relevant guidance and the geographic scope of potential impacts. The potential impacts may be temporary or permanent and may be positive or negative. All types of impact are considered when defining the study area.

The individual chapters provide details of the study area, including a description of baseline conditions, for each discipline. For the purpose of this rEIAR, the baseline environment refers to conditions within the study area as of January 1990, when the EIA Directive came into force.

1.6 Public Consultation

On behalf of the applicant, McCutcheon Halley Planning engaged in pre-application consultation with statutory authorities listed below to inform the EIAR preparation process. Prescribed bodies shown in bold text below provided a response. Where the response included comments or recommendations, these have been considered by the EIAR contributors and are addressed in the relevant chapters, as appropriate.

- 1. Cork County Council**
2. Department of Housing, Local Government and Heritage (Development Applications Unit)
 - a. National Monuments Service
 - b. National Parks and Wildlife Service**
 - c. The Heritage Council
3. Department of Environment, Climate and Communications
4. Department of Rural and Community Development
5. Department of Agriculture, Food and the Marine
6. An Chomhairle Ealaíon - The Arts Council
7. Environmental Protection Agency
- 8. Geological Survey Ireland**
- 9. Transport Infrastructure Ireland**
10. An Taisce - The National Trust for Ireland
11. The Health and Safety Authority

12. The Health Service Executive

13. Birdwatch Ireland

14. Bat Conservation Ireland

15. Uisce Eireann

16. Department of Education

17. Inland Fisheries Ireland

18. Failte Ireland

In addition to the above, the required information has been issued for the Department of Housing, Planning, and Local Government's EIA Portal. This tool informs the public in a timely manner of applications accompanied by an EIAR.

1.7 Impact Assessment

Each chapter of this EIAR assesses the direct, indirect, cumulative, and residual impact of the development.

Having regard to the nature of this development, there is no traditional 'construction phase'. Rather there is an initial development phase that includes stripping of the topsoil and placement in berms to screen the active area. For the purpose of this rEIAR, this phase is referred to as the Construction Phase.

The identified quality, significance, and duration of effects for each aspect is primarily based on the terminology set out in the EPAs Guidelines on the information to be contained in Environmental Impact Assessment Reports (2022)

1.8 Cumulative Impacts

In relation to the assessment of cumulative impacts arising from the construction and operation of the quarry between 1990 and 2014, the operation of a permitted macadam / asphalt manufacturing plant, owned and operated by Murray Bros since 1998 have been considered (details below). No other industrial or business developments in close proximity to the site have been identified, the construction and/or operation of which between 1990 and 2014 would have led to a significant impact on the environment. The majority of the applications in the surrounding area related to one off housing and minor agricultural works.

Each EIAR contributor has adopted an approach to the assessment of cumulative impacts that is appropriate to their discipline based on relevant technical guidance and best practice, and having regard to the nature, magnitude and geographical extent of the predicted impacts, as well as the sensitivity of the receiving environment.

1.9 Risk of Major Accidents and Disasters

The potential of major risks and disasters as a result of the development has been assessed by other disciplines within this EIAR. No risk of major accidents and disasters has been identified. There are no sites in proximity which are subject to The Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015.

1.10 Statement of Significant Impacts

The significance of the effects of the development at Ardcahan Quarry have been assessed according to the EIAR guidance and with the professional judgement of the competent experts who assisted in

preparing this rEIAR (the study team are presented in Table 1.1 of this rEIAR). The significance of effects for each discipline is described using the terms provided in the 2017 EPA EIAR Guidance document.

Any significant effects which may have occurred as a result of construction and operation at the quarry between 1990 and 2014 are identified by each discipline within each chapter, and a statement of significant effects is included at the end of the chapter.

2 Planning Policy Framework

2.1 Introduction

This section sets out the planning and development context relating to the former quarry development and reviews the national, regional and local planning policy. In the interests of comprehensively addressing the policy context, this chapter addresses policy which coincided with the relevant period for the development (1990 to 2014) and the current policy framework

The following national and local planning guidance are addressed in this Section;

- National Planning Framework: First Revision (2025)
- The Guidelines for Planning Authorities, Quarries and Ancillary Activities', April 2004
- Regional Spatial and Economic Strategy for the Southern Region 2020-2032
- Cork County Development Plan 2022-2028
- County Development Plans (covering the period from 1990 – 2014)
 - Cork County Development Plan 1986
 - Cork County Development Plan 1996
 - Cork County Development Plan 2003
 - Cork County Development Plan 2009
 - Cork County Development Plan 2014
- Local Area Plans (covering the period from 1990 – 2016)
 - Skibbereen Local Area Plan 2005
 - Skibbereen Electoral Area Local Area Plan 2011
 - West Cork Municipal District Local Area Plan 2017

2.2 Compliance with National and Local Planning Policy

It is considered that the subject development is consistent with national level guidelines for the provision of aggregates to meet local construction requirements and Cork County Council policies for the provision of sustainable locally sourced aggregates. Our clients' quarry at Ardcahan has long been recognised as being of significant value containing high quality resource and has for a very long period of time provided material to a significant number of clients, including Cork County Council. In 1999, our client's operation in Ardcahan was supplemented and improved by the addition of a macadam / asphalt manufacturing plant permitted under Council Ref. 98/294.

Extraction from the Ardcahan Quarry provides a sustainable option for the provision of aggregates for the macadam plant and local road construction projects in Counties Cork and Kerry. The development is consistent with national level guidelines for the provision of aggregates to meet regional and local construction requirements and county policy for the provision of sustainable locally sourced aggregates. Murray Brothers Tarmacadam Ltd. are a substantial employer in the context of the rural location and the development will help to sustain the company and support the local economy.

Overall, the subject development is consistent with national level guidelines as well as County and local planning policy.

3 Project Location and Description

3.1 Site Context

The Ardcahan Quarry is in the townland of Ardcahan, approximately 3.5km north-east of Dunmanway in West Cork. The site is situated off the L4621-9 local road ('Hospital Road'), approximately 300m east of its junction with the R587 regional road, which links Dunmanway and Macroom (see Figure 2.1).

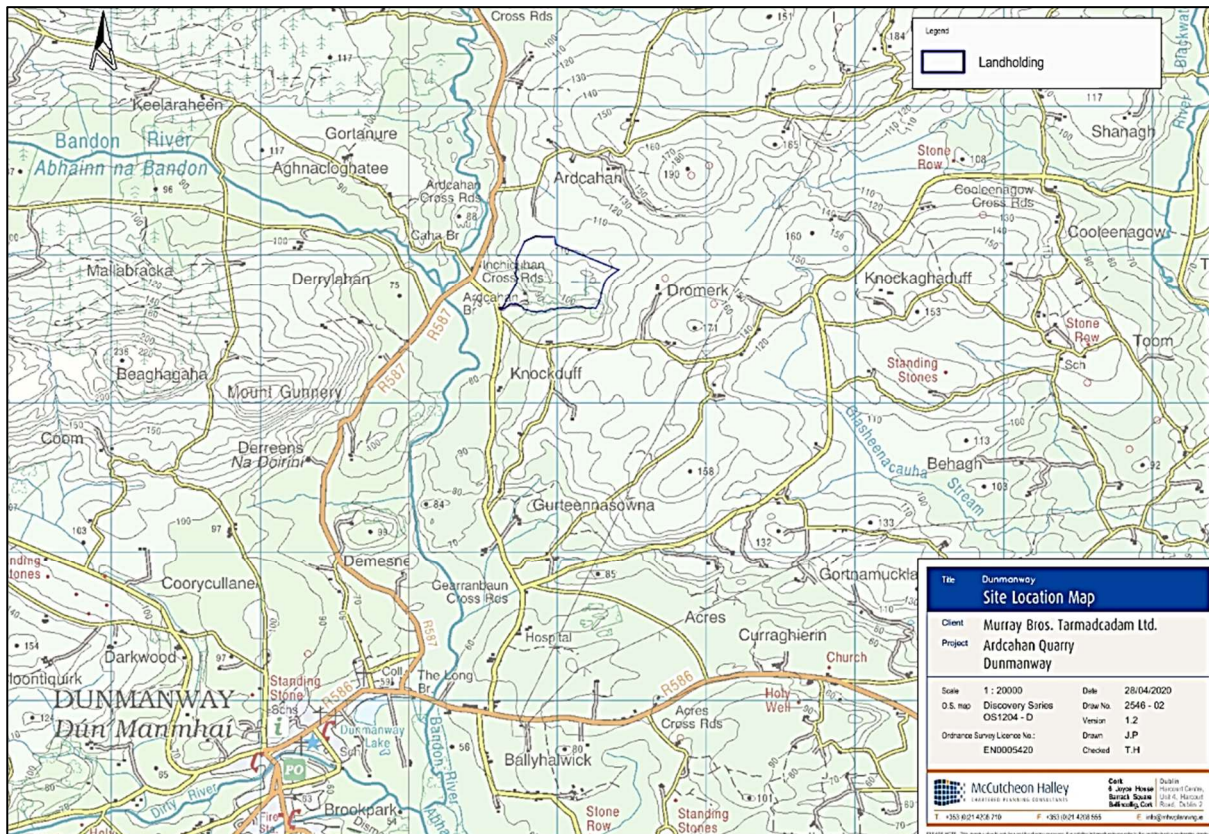


Figure 3-1 Site context with regard to surrounding area

It is a rural location, with primary land uses in the area of livestock farming and low-density housing. The nearest dwellings are located approximately 300m south; 275m west; 4500m north and 400m east of the development. There are no other businesses or community facilities in close proximity to the site.

The junction of the Caha and Bandon Rivers is located approximately 400m west of the site. A small watercourse that flows into the Bandon River extends along the eastern and southern boundaries of the landholding.

The area within the overall landholding measures approx. 25 hectares (ha). The lands are sloped with lower ground levels in the south-west (~72 to 75 MOD¹) rising to the north (118 MOD).

The application site has an area of approximately 19.1 ha. The southeast part of the landholding is not included within the red line boundary as it contains land quarried prior to 1990 and the macadam

¹ Metres over ordnance datum

plant and associated development permitted under Reg. Ref. 98/294. It is therefore outside the scope of the project for which substitute consent is sought.

3.2 Project Description

The project is limited to quarry development which was carried out on site between 1990 (when the EIA Directive came into force) and 2014 (when quarrying ceased), comprising the extraction of quartzitic sandstone and ancillary activities.

The total area excavated between 1990 and 2014 measures approximately 5.2 ha. As shown in Figure 3.5, it is situated in the southwest of the applicant's landholding.

The extent of the former extraction area has been ascertained using Ordnance Survey aerial photography for the years 1995, 2000, 2005, and 2014. Aerial photography is not available for the baseline year, so the size of the extraction area in 1990 has been established using information provided by the quarry operators.

The extent of the extraction area progressively increased from approximately 5.1 ha in 1990 to c. 10.3 ha in 2014. This represents a total increase of 5.2 ha during the period, comprising the former extraction area subject of the Substitute Consent application.

The extraction process involved stripping the overburden (the soil and subsoil above the bedrock) with an excavator to an average depth of approximately one metre below ground level. The overburden was then transported within the site by large dump trucks and stockpiled for later use. Cleared areas were then worked in a bench system by removing the rock in layers, generally excavating to a level of 74 to 75 MOD.

Based on the historic aerial photography and information provided by the quarry operators, it is estimated that approximately 1,000,000 tonnes of rock aggregate were extracted between 1990 and 1999². Following a pause in extraction activity in 2000 and 2001, annual extraction data indicates that 1,234,547 tonnes were quarried from 2002 to 2014.

The total amount of rock excavated between 1990 and 2014 equates to approximately 2,234,000 tonnes or an average of 93,083 tonnes of stone per annum over a 24-year period.

Following its completion in 1999, the quarried aggregate/material provided single sized aggregate, which was primarily used to supply the macadam plant on site, and crushed grade stone for civil engineering use for road construction projects in Counties Cork and Kerry.

On average, 93 truckloads of aggregate³ left the site weekly, carrying an average of 20 tonnes per lorry (estimated weekly average over the 24-year period, based on a 50-week operational year).

The quarried material was extracted by boring and blasting using industrial explosives. Boring or drilling would have occurred one week prior to blasting. Blasting typically occurred every few months (c. 4 to 6 blasts per annum), depending on stocks and the commercial environment.

The blasting was undertaken by a specialist company (Irish Industrial Explosives Ltd) under Garda escort. The rock was then crushed and screened on the quarry floor under contract, before being stored in stockpiles and storage bays on site.

² The applicant acquired the quarry in 1999 and has estimated the quantity of extracted material, as records are not available for the period.

³ Excludes traffic associated with the macadam plant.

Between 1990 and 2014, the quarrying operation employed an average of seven full-time staff members, and the crushing contractors employed an average of six people. Transportation of aggregates was carried out by employees of the quarry and contracted out to haulage companies, as required.

General operating hours were 7.30 am to 5.30 pm Monday through Friday, with occasional Saturday hours of 7.30 am to 2.30 pm. Blasting operations were restricted to between 10.00 am and 4.00 pm.

A contract crushing company processed excavated materials on-site, using primary jaw crushers and cone crushers to crush the stone and screening plants to size and separate the aggregate. Other machinery used at the quarry included loading shovels, excavators, and haulage vehicles.

Aggregates produced from blast rock include 20mm; 14mm; 10mm, 6mm and dust, and the products from this included 4 inch stone and 2 inch stone, used as a sub-base for all types of road works, from 75mm and down.

Operational processes at the quarry were undertaken using the site's existing infrastructure, including the bored well and pump house, septic tank, and existing roads.

4 Alternatives Considered

The EIA Directive requires consideration of reasonable alternatives relevant to the proposed project. This rEIA has been prepared to accompany a substitute consent application for development already carried out at Ardcahan Quarry, which ceased in 2014. Its scope does not extend to a proposed project. As such, the retrospective nature of the substitute consent process inherently limits the consideration of reasonable alternatives.

4.1 Do Nothing Scenario

The 'Do Nothing' Scenario implies that quarrying activities at the site would have been discontinued in February 1990, when the EIA Directive came into force and which marks the beginning of the relevant period for the purpose of this substitute consent application. Strictly speaking, a 'Do Nothing' Scenario would mean that quarrying at the site would not have been carried out between 1990 and 2014, and the predicted impacts for each of the environmental disciplines addressed within this rEIA would likely not have occurred. The potential impacts associated with this 'Do Nothing' Scenario are considered according to the prescribed environmental factors within the individual chapters.

It is noteworthy, however, that this scenario does not take account of the relevant history regarding the implementation of the EIA Directive into Irish Law, and the specific procedures that were introduced in 2004 in respect of quarries.

4.2 Alternative Locations

As a 'pre-1963' quarry which remained operational up to 2014 providing aggregates to the construction sector, it is reasonable to assume that the reserves of available material which were extracted from 1990 to 2014 were of proven high quality and a key determinant of the overall scale and design approach.

In this instance, consideration of alternative sites is constrained by the historic nature of the development. It is also of note that aggregates, by their nature, can only be worked where they occur, a further limitation to the consideration of alternative sites.

5 Population and Human Health

5.1 Introduction

This chapter of the rEIAR assesses the potential impacts of the construction and operation of the quarry at Ardcahan on population and human health that are not covered elsewhere in the rEIAR. It also details the proposed remedial and/or mitigation measures where necessary. The potential impacts on, and mitigation or remediation measures for population and human health were assessed under the following headings: Do Nothing Scenario, Human Health (including Health and Safety), Population and Settlement Patterns, Economic Activity, and Local Amenity.

5.2 Baseline Environment

5.2.1 Population

The study area includes four Electoral Divisions (EDs): Aultagh, Coolmountain, Dunmanway, and Manch, all within Cork County Council's administrative area. The subject site, located in the townland of Ardcahan within Aultagh ED, is positioned very close to the borders of the other EDs—Coolmountain to the west, Dunmanway to the southwest, and Manch to the south.

The population density and composition for each of the EDs has experienced substantial changes between 1991 to 2022. However, overall the area has maintained the relatively low population density typical of rural areas.

Across all areas (Aultagh, Coolmountain, Dunmanway North, Manch, Co. Cork, and Ireland), the average household size remains relatively stable, ranging between 2.5 and 3.2 persons per household between 1991 to 2022.

Over the years, Agriculture's share of employment in the combined EDs (Aultagh, Coolmountain, Dunmanway North, Manch) declined, reaching 9.8% by 2022. Construction stabilised at 7.9% after 2011, likely reflecting the economic slowdown post-2008. Professional Services increased, reaching 22.8% in 2016 and 19.54% in 2022. These changes indicate a shift from agriculture in rural EDs like Aultagh toward more diverse sectors, with Dunmanway North maintaining a consistent focus on Professional Services.

5.2.2 Economic Activity

The nearest town centre is Dunmanway, which is 4.6km from the development and is limited in terms of its service and employment provisions. Current employment trends nationally show that workers in the tertiary sector are migrating to larger urban centres for employment, and the trend is expected to be similar in West Cork.

An understanding of the economic importance and contribution of the extractive industry in Ireland, and by extension the importance of Ardcahan Quarry to the local and regional economy, between 1990 and 2014 can be inferred from the growth of the construction sector between 1990 and 2004. According to the ESRI, the number of dwellings built in Ireland at the height of the boom was approximately 100,000, compared to the levels in 2014 (10,000).

5.2.3 Land Use and Amenity

The study area which contains the development is dominated by large parcels of agricultural land throughout with the exemption of Dunmanway town which is approximately 3km to the South-West of the development. The landscape contains a dispersed settlement pattern throughout with primarily one-off housing developments.

In terms of amenities, the study area is relatively secluded and offers minimal services or community facilities. The closest service is the Bluebell Cottage/Waterfall Guesthouse which is located 1.6km from the subject site. The other two services in the vicinity are Funmanway Adventure Land and Dunmanway Community Hospital which are 4.6km and 2.4km respectively. There are a number of walking and cycling trails⁴ located to the west of the Quarry, which are concentrated around Nowen Hill (c. 10km to the west) and Pipe Hill (c. 10km to the north-west).

5.3 Impact Assessment

5.3.1 Do Nothing Scenario

The 'Do Nothing Scenario' would have resulted in no further quarrying activity at the quarry post 1990, with cessation of aggregate extraction. A significant portion of the site would have remained in active use for Murray Brothers macadam plant, which it is assumed would still have operated. The longevity and feasibility of Murray Bros as a company would have been compromised.

In terms of a 'Do Nothing Scenario', the impact with regards to aggregate provision is indeterminable without data projections for future aggregate demand and other alternative sources. The potential 'Do Nothing Scenario' would have put pressure on other quarry resources in the vicinity to meet output requirements in the medium to long term as these quarries would need to export to the Ardcahan quarry. Overall, the impacts of this scenario on land use are deemed neutral to indeterminable.

5.3.2 Construction Phase Impacts

5.3.3 Economic Activity

The construction activities are not regarded as having had any impact on economic activity in the wider area between 1990 and 2014. Construction would have taken place within the boundary of the site. While construction activities at the quarry would have had a negligible effect on the economic profile of the rEIAR study area, they were necessary to support the activities at the quarry and to provide facilities for onsite staff, to ensure that the quarry and the macadam plant could operate efficiently. Indirectly, construction activities would therefore have had a positive effect on the economic viability of the quarry. No economic impacts have been identified that are resulting in ongoing economic effects, either positive or negative, as a result of construction related activities.

5.3.4 Population and Settlement Patterns

The construction activities are not regarded as having had any impact on population and settlement patterns for the rEIAR study area between 1990 and 2014. All of the activities would have taken place within the boundary of the site, and any related noise or disturbance would have been masked by the on-going operations of the quarry and macadam plant.

The features such as the berm, settlement ponds, etc. remain in situ and given the size of the overall landholding the loss of land is not likely to have had an effect on the wider area in terms of availability of lands for housing, community uses, etc.

5.3.5 Land Use and Amenity

The Landscape and Visual Impact Assessment (LVIA) noted that activities associated with construction have not resulted in significant landscape or visual impacts. Potential impacts as a result of emissions to air were assessed in Chapter 8 Air and Chapter 9 Climate. The assessment found that dust emissions

⁴ <https://explorewestcork.ie/walking/dunmanway-hill-walking-trails/>

were likely to occur during initial topsoil removal and stripping. However, as there are no sensitive receptors in close proximity to the site it is likely there were no significant dust impacts as a result of initial construction works and therefore mitigation measures were not necessary. Also, no ongoing impacts on land use and amenity have been identified associated with the construction phase.

5.3.6 Operational Phase Impacts

5.3.7 Economic Activity

The potential operational impacts on economic activity are directly associated with the medium to long term sustainability of the existing business, continuation of direct and indirect employment and impacts on other economic activities in the vicinity of the development.

Overall, the development at Ardcahan Quarry had and will continue to have medium positive medium-term impact on economic activity both on site and in the vicinity of the development.

5.3.8 Population and Settlement Patterns

It is not likely that the operation of the quarry had any effect on population and settlement patterns in proximity to the quarry or the wider area.

No ongoing impacts to population and settlement patterns as a result of the operation of the quarry have been identified.

5.3.9 Land Use and Amenities

Most of the recreational activities identified in the vicinity of the development have co-existed with the quarry since it became operational pre-1963. The area subject to the substitute consent application contained within the current landholding of Murray Brothers and has not directly impacted local amenities such as walking trails.

The subject areas are contained within the Murray Brothers landholding and are adjoining the previous extraction zones. In the vicinity of the development there is no evidence that amenities or rights of way are being negatively impacted or will experience negative impacts as a result of quarrying activities that took place between 1990 and 2014. No ongoing impacts or potential impacts as a result of noise and vibration have been identified.

5.3.10 Health and Safety

The assessment of potential impacts on Chapter 6 Land and Soils identified that there is the potential occurrence of unstable rock slopes following blasting and/or rock removal from the exposed rock faces which could create a health risk to site users. This would have a temporary negative but long-term neutral impact to the site. Proper quarry face management would negate this rock fall and slope stability risk.

Based on predictive models presented in Chapter 8 Air Quality and Chapter 9 Climate, the nearest potential receptor would be exposed to 12% of the maximum TA Luft Limit Value in a worse-case scenario, therefore there would be no likely significant impacts to human health.

5.4 Mitigation

There is no requirement for mitigation or remediation measures other than those proposed by other disciplines.

5.5 Residual Effects

None identified.

5.6 Monitoring

No monitoring is proposed other than that proposed by other disciplines.

6 Land, Soils and Geology

6.1 Introduction

This is the non-technical summary of the Land Use/Soil, (Geology) remedial Environmental Impact Assessment Report (rEIAR) completed as part of the subsequent consent application for the quarrying related activities undertaken from 1990 to 2014 at the Ardcahan Quarry near Dunmanway, in West Cork.

The subject site was part of an established sandstone aggregate quarry located adjacent to an active macadam processing facility. Background information on the localities Land Use/Soils, (geology attributes) their characteristics and status were obtained from a wide variety of documents and online references as well as site visits. Consultation was also undertaken with the relevant authorities.

The site was originally owned by Cork County Council and then operated by McSweeney Bros prior to Murray Bros taking over the quarry in the late 1990's. The macadam plant was opened on the site in 1999.

6.2 Existing Environment

The Geological Survey of Ireland (GSI) and Environmental Protection Agency (EPA) soils mapping data indicates that the soils in the area are absent or comprise of very thin (<1m) non calcareous glacial deposits.

The interbedded sandstone and siltstone bedrock sequences which underlie the site are identified by the GSI as the Caha Formation, (CH), which is a very extensive bedrock sequence in the West Cork area. The bedrock has a very good quartz content and polished stone value (PSV) which makes it ideal for road surfacing and aggregate use. The soil and bedrock would be considered to be of low importance except for the aggregate potential which is very high.

The site is mapped by the Geological Survey Ireland (GSI) as being located just to the north of a large east-west orientated geological fault feature which is sited along its southern boundary. Bedrock to the south is identified as the Gun Point Formation (GP) which is a sandstone rich sequence, but this is not quarried on the site.

The bedrock and soil exposures in the established quarry area confirm the GSI classifications with thin topsoil's occurring over shallow northwardly dipping sequences of interbedded sandstone and siltstone. Test hole drilling at eight locations to 20m depth completed in the northern portion of the quarry in 2006 identified potentially better, (more sandstone rich), rock in the north-eastern portion of the site.

There are no 'Legacy Landfills,' Integrated Pollution Prevention and Control (IPPC) licensed facilities, active or historical mines, geological resource or heritage areas, proposed National Heritage Areas (NHA), or Special Protection Area (SPA) within the vicinity of the site.

The Bandon River Special Areas of Conservation (SAC) is located to the west of the site. The small watercourse which borders the eastern and southern side of the site is a tributary of the Bandon River and forms part of the SAC from about 40m to the southwest of the site.

6.3 Potential Impacts

Potential construction phase impacts relate to the removal of the soil cover, development of internal roads, berms and ponds while potential operational phase impacts relate to the quarrying and aggregate preparation processes, water management and product transport.

Impacts on soil and bedrock include is removal and risk of pollution by fuels leaking from machinery. There are also the impact risks from fine sediment runoff or chemicals used for controlling suspended sediments, from dust generation and from chemicals used in the blasting process. Steep, over hanging or unsupported quarry faces can pose stability risks.

6.4 Mitigation Measures

Good construction management such as placement of soils away from water features, the controlled refuelling of machinery and bunding of fuel storage and chemical areas has been undertaken. Chemical use for sediment settlement was controlled and used as part of a closed water recycling system. Blasts were controlled so that no chemical excesses occurred.

Any exposed bedrock sections have been quarried and managed in such a way that the potential for long term slope instability to occur has been minimised. Earthen berms and a buffer zone have been maintained around the boundary of the site to ensure that the risk of off-site impacts is minimised.

All excavated materials have been used as raw aggregate product for distribution to clients and by the adjacent macadam plant.

6.5 Conclusions

The impact assessment of the completed construction and operational quarry works from 1990 to 2014 does not indicate that any significant negative effects on the Land Use/Soils (Geology) attributes has occurred due to the site activities.

Taking the implemented mitigation measures into account, the final residual impact for all of the above impacts is rated to be Imperceptible.

7 Hydrology and Hydrogeology

7.1 Introduction

This is the non-technical summary of the Water (hydrology and hydrogeology) attributes remedial Environmental Impact Assessment Report (rEIAR) completed as part of the subsequent consent application for the quarrying related activities undertaken from 1990 to 2014 at the Ardcahan Quarry near Dunmanway in West Cork.

The subject site is part of an established sandstone aggregate quarry site located adjacent to an active macadam processing facility. Background information on the localities water attributes their characteristics and status were obtained from a wide variety of documents and online references as well as site visits. Consultation was also undertaken with the relevant authorities.

The site was originally owned by Cork County Council and then operated by McSweeney Bros prior to Murray Bros taking over the quarry in the late 1990's. The Murray Bros Tarmac Plant was opened on the site in 1998.

7.2 Existing Environment

The Ardcahan site is located in the River Bandon catchment area and is bounded on its eastern and southern sides by a small un-named watercourse which is a tributary of the River Bandon. The stream, (called the boundary stream), joins the River Bandon about 400m to the southwest of the site area.

A number of sediment settlement and surface water attenuation ponds have been constructed around the site over the years. Ponds in the old (original) quarry area in the central part of the site provide both water retention and sediment attenuation while a couple of the ponds in the northern part of the old quarry are specifically used for the management of wash water and sediment control.

There are also three surface water ponds which have been developed in the low-lying areas of the northern part of the site that have formed due to the placement of soil berms that have changed the natural drainage regime. These ponds have developed into freshwater ponds that are used to provide fresh water to the quarry as necessary, and also now provide freshwater habitats that have improved the biodiversity of the locality.

Surface water is stored in these ponds and used in the processing of aggregate and macadam production and is recycled and re-used as much as possible before being discharged from the site.

There are a couple of attenuation ponds in the topographically low south-western corner of the site which takes runoff from the main quarry and aggregate storage areas as well as the sites access road.

There are five locations where the surface water discharges to the adjacent boundary stream.

1. Pipe on the eastern boundary that takes overflow from the northern surface water ponds,
2. Drainage ditch beside the internal road at the back (north) of the Tarmac Plant area,
3. Piped overflow from Tarmac Plant Hardstand area via three silt trap drains and old interceptor,
4. Overflow from the central ponds in the old quarry area and commercial interceptor,
5. Overflow from the quarry & attenuation pond system in the south-western corner of the site.

An earthen berm constructed along the southern boundary of the site prevents direct runoff to the stream from the access road and the majority of the site area.

There have been no changes to the size of the catchment area or total volume of water going to the local hydrological system due to the quarry, although the attenuation ponds would reduce peak flows.

The Bandon River down gradient of the site is a designated Special Area of Conservation (SAC) with vulnerable populations of the Freshwater Pearl Mussel (FPM) identified in this part of the river system. The Bandon River located in the Southwestern River Basin District and is regarded as being of very high regional importance due to its good water quality, proximity to the Bandon SAC and suitability for FPM habitat and salmonid species.

A water quality assessment of the small stream has been undertaken, in terms of water chemistry and invertebrate populations (Q-Rating) as part of previous planning applications and the stream was found to have good water quality with little evidence of significant impact from the established quarry that has been in operation adjacent to the stream for a number of decades. It is considered to be of high local importance. The stream forms part of the Bandon SAC from about 40m south of the site.

Some suspended sediment sampling by the project ecologist in 2014 identified elevated sediments in the stream after a heavy rainfall event due to runoff from the quarry and tarmac plant areas. While their studies did not identify significant impacts it did confirm the potential for cumulative sediment pollution risk to occur from both sites during high runoff conditions.

The majority of the small stream catchment is within an agricultural grass and livestock land use and there are also sediment and agricultural nutrient runoff risks to the stream from this activity.

The interbedded sandstone and siltstone bedrock sequences which underlie the site are identified as the Caha Formation, (CH). The formation is classified by the GSI as being a poor aquifer (PI) which is generally unproductive, except in local zones. The site only has a thin (<1m) of soil cover and based on GSI vulnerability rating criteria the site-specific groundwater vulnerability rating is Extreme (E). The soil and bedrock and aquifer potential would be considered to be of low importance except for the aggregate potential which is high.

The bedrock and soil exposures in the established quarry area confirm the GSI classifications with thin topsoil's occurring over shallow northwardly dipping sequences of interbedded sandstone and siltstone. Recent borehole drilling and groundwater monitoring indicates a shallow water table under the site. The low permeability of the bedrock means that the movement of groundwater in the rock mass is very low and the groundwater levels drops as the ground height is reduced. The permanent water table was encountered within one to two meters of the lower quarry floor in the southwestern area of the site. The presence of large ponds of surface water occurring in the upper northern part of the site very, close to the old quarry face, shows the low permeability of the bedrock and the occurrence of perched water in the upper boreholes does not represent the permanent water table.

There is one well supply located within the macadam plant area of the established site which supplies potable water to the site office and welfare facilities. The groundwater quality of samples previously acquired from the well indicated generally good water quality apart from one sample with extremely low trace levels of hydrocarbons which could be due to the location of the well in the area of the macadam processing facility where it would be vulnerable to vehicle activity immediately around the well area. Recent sampling has not identified any evidence of hydrocarbons.

The site used and re-cycled ponded surface water for all its on-site process and dust control needs and no groundwater abstraction was required or is planned for the quarry operation. The established lower quarry floor at the southwestern side of the site is above the natural groundwater table.

7.3 Potential Impacts

Potential construction phase impacts relate to the removal of the soil cover, development of internal roads, berms and ponds while potential operational phase impacts relate to the quarrying and aggregate preparation processes, water management and transport.

The main potential impact to surface water quality and character of the receiving waters are associated with increased sediment runoff or accidental spillage of polluting substances entering the receiving watercourses. These potential impacts are primarily of concern for the operational phase of the quarry's activity.

The primary groundwater impact would relate to pollution of the exposed bedrock by fuel spills or leaks from machinery or storage areas around the site. No interaction with the permanent groundwater table has occurred.

7.4 Mitigation Measures

Control of sediment generation by quick revegetation of earthen berms and landscaped areas and use of a wide buffer zone (~15m) on the edge of the site has helped mitigate the risk of fine suspended sediments washing from the excavated soils during the construction phase of the works.

The use of dedicated re-fuelling areas, drip trays, double skinned bowsers, spill kits and good site management have helped mitigate the risk of hydrocarbons being lost to ground in the quarry area.

Surface water runoff being diverted and recycled through the numerous surface water attenuation ponds and/or allowed to percolate to ground via the bedrock or old soakaways has helped reduce the sediment runoff risk and also the peak flow water volume being discharged from the site.

7.5 Conclusion

The development has not changed the catchment area or hydrogeological characteristics of the site area. Some changes to the drainage regime by the construction of the surface water retention ponds will have reduced the peak flows but these would be minor in the context of the size of the River Bandon catchment area.

No interaction with the natural permanent groundwater table has taken place or is proposed and no in-stream works have occurred or are proposed for the development.

The impact assessment of the completed construction and operation works does not indicate that any significant effects on the Water attributes has occurred due to the site activities.

Taking the implemented mitigation measures into account, the final residual impact for all of the above impacts is rated to be Imperceptible.

Improvements to the environmental management of the site, upgrading the site interceptors, increased monitoring and the implementation of the proposed site landscape and remediation plan will be implemented as part of any future development of the site.

Regular chemical and biological sampling of the adjacent stream should be undertaken upstream and downstream of the quarry and tarmac plant areas to monitor surface water quality.

Good practice guidelines for the quarry industry should continue to be implemented such as; the ICF Environmental Good Management Practices (2nd Edition) and the EPA Environmental Guidance for the Extractive Industry.

8 Air Quality

The potential air quality impacts associated with the historic development are detailed within Chapter 8 of the EIAR. The assessment focussed on potential impacts to air quality as a result of operational quarrying activities.

8.1 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 (PM2.5) are generally well below the National and European Union (EU) ambient air quality standards.

8.2 Impact Assessment

Impacts to air quality associated with the historic quarrying activities were as a result of 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 PM2.5 from the historic 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.

The results of the dispersion modelling assessment show that dust deposition levels, annual and daily mean concentrations of PM10 and annual mean concentrations of PM2.5 from the historic quarrying operations are below the relevant limit values.

The results indicate that the effect of the operational phase (i.e. Substitute Consent Operations Scenario) on air quality is **localised, direct, long-term, negative and slight** which is overall **not significant**.

Quarrying activities ceased on site by 2014 and there are no activities taking place on site at present, as a result, there are currently no impacts to air quality associated with the development site.

8.3 Mitigation Measures

There were a number of mitigation measures on site to reduce dust emissions. These measures have been incorporated into the modelling assessment to determine the impact of the site on levels of dust deposition and ambient levels of particulate matter. The measures are listed in Section 8.5 of Chapter 8 of the EIAR.

8.4 Residual Impacts

The assessment involved modelling emissions from the historic quarrying operations. Predicted dust deposition rates, annual and daily mean concentrations of PM10 and annual mean concentrations of PM2.5 from the quarrying operations are in compliance with the ambient air quality limit values which are set for the protection of human health and the environment.

It can be concluded that the historic development had a **localised, direct, long-term, negative and slight** effect on air quality which is overall **not significant**.

9 Climate

The potential impact on climate associated with the historic development is detailed within Chapter 9 of the rEIAR. The climate assessment has focussed on the potential greenhouse gas emissions during the operational phase of the development.

9.1 Baseline Environment

The climate baseline was determined by reference to data from the EPA on Ireland's total greenhouse gas (GHG) emissions from 1990 to 2024. GHG emissions in 2024 are -3.4% less than emissions in 1990, which is the second consecutive year that emissions are below the 1990 historic baseline. Between 1990 and 2024 the greatest overall increase in emissions is from the Transport sector.

In relation to the current climate GHG emissions baseline, and in order to frame the historic baseline against a current climate context, Ireland's compliance with the EU Effort Sharing Regulation (ESR) (EU 2018/842) and the published carbon budgets. 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.

9.2 Impact Assessment

The potential impacts on climate have been assessed through a greenhouse gas assessment (GHGA). 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 impact of the operation of the historic 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 have occurred 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 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.

Quarrying activities ceased on site by 2014 and there are no quarrying activities taking place on site at present, as a result, there are currently no impacts to climate associated with the development site.

9.3 Mitigation Measures

The information available indicates that there was no specific mitigation measures implemented on site in relation to reducing emissions or climate impacts.

9.4 Residual Impacts

The historic quarrying activities resulted in some GHG emissions which impacted climate. The impact to climate has been assessed as moderate adverse using the TII significance criteria; this is a development which:

- The project's GHG impacts are partially mitigated.
- The project has partially complied with do-minimum standards set through regulation, and have not fully complied with local or national policies; and
- Falls short of full contribution to Ireland's trajectory towards net zero.

In accordance with the EPA guidelines (EPA, 2022), this equates to a **direct, long-term, negative, significant** effect.

10 Noise and Vibration

10.1 Introduction

This chapter evaluates the impacts and remedial measures, if required, for the quarry at Ardcahan, Dunmanway in terms of Noise and Vibration as defined in the Environmental Protection Agency Advice Notes and Guidelines.

The rEIAR is to be submitted as part of a Substitute Consent planning application covering the period 1990 to 2014.

10.2 Guidance And Criteria

The noise and vibration assessment was undertaken by reference to a wide range of internal and external criteria set out in relevant guidance documents and standards, including:

- Cork County Council planning decision (Ref. 98/294);
- Cork County Council correspondence and decision (Ref; 14/00616);
- An Bord Pleanála Grant of leave to apply for substitute consent (ABP Ref. 302158-18).
- Environmental Management in the Extractive Industry (Non-Scheduled Minerals), EPA 2006;
- Quarries and Ancillary Activities – Guidelines for Planning Authorities – DoEHLG, April 2004;
- ISO 1996-2:2017 Acoustics - Description, measurement and assessment of environmental noise - Determination of sound pressure levels;
- BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Noise;
- BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites - Vibration;
- BS 7385-2:1993 Evaluation and measurement for vibration in buildings Guide to damage levels from groundborne vibration; and,
- BS 6472:2008 - Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting.
- Planning and Development Act 2024

10.3 Description Of Existing Environment

It is necessary to try and establish the prevailing noise climate in the vicinity of the nearest noise sensitive receptors during the substitute consent period. The nearest noise sensitive locations to the substitute consent site are located approximately 150 to 550 metres to the nearest property boundary. The relevant noise sensitive locations are comprised solely of residential properties.

The majority of the nearest noise sensitive receptors are all located in a rural location situated at a remove from other major urban centre or transport infrastructure. The noise climate at these locations would have been dominated by local road traffic which has not increased significantly over the period. Review of the Traffic Chapter of the rEIAR confirms that road traffic volumes on the R587 have increased marginally over the period but not enough to significantly increase the ambient noise levels for receptors located in close proximity to the road.

Given the context of the site, it is the opinion of CLV Consulting that it is reasonable to consider that the prevailing noise climate towards the end of the substitute consent period would be generally representative of that throughout the entire substitute consent period. Data from the noise survey completed in 2014 as part of the previous EIAR for the site has therefore been utilised to inform the rEIAR assessment.

10.4 Predicted Impacts

Onsite quarry activity having the potential to generate noise during the SC period can be summarised into a number of key groups as follows:

Table 10-1 Summary of noise generating activities onsite

Activity	Typical Noise Generating Tasks
Preparation of quarry area	<ul style="list-style-type: none"> ▪ Ground clearance and removal of vegetation

Activity	Typical Noise Generating Tasks
	<ul style="list-style-type: none"> ▪ Excavation and removal of soil and overburden ▪ Drilling of blast holes
Processing quarried material	<ul style="list-style-type: none"> ▪ Loading and operation of crushers and screens
Material handling	<ul style="list-style-type: none"> ▪ Stockpiling quarried aggregate within the site ▪ Stockpiling of soil and overburden ▪ Loading customer vehicles ▪ Loading Murray Brothers trucks and movement offsite

The assessment concluded that due to the extended period of assessment (24 years) and the large footprint of the assessment site, the level of uncertainty involved in such calculations would be so significant that they would not provide any meaningful insight into noise levels generated during the period.

Potential noise and vibration impacts from blasting were also assessed. Historical blasting air overpressure monitoring data for the site demonstrates that blasting air overpressure ranged from 116 to 121 dB (Lin) at the measurement position. Historical blasting vibration monitoring data demonstrates that no blasting events during the period exceeded the 12 mm/s criteria.

Blasting noise and blasting vibration would have given rise to slight to moderate negative impacts of momentary duration over the assessment period.

10.5 Remedial Mitigation Measures

In the first instance, the site layout itself and surrounding topography provides a significant degree of natural acoustic screening to the nearest residential dwellings. One of the most feasible options for noise mitigation of general quarry operations is the appropriate stockpiling of overburden to maximise screening to noisy areas within the site, it is understood that stockpiling on the site was completed over the period of assessment with consideration to noise propagation offsite.

It is reasonable to assume that noise and vibration impacts arising from blasting during the assessment would have been reduced through the implementation of the mitigation measures in place at the time;

- a) Taking particular care with the development of faces and with trial blasts at a quarry or opencast coal pit, as anomalous vibration levels might be produced when there is no free face to relieve the energy produced;
- b) Ensuring appropriate burden to avoid over or under confinement of the charge;
- c) Accurate setting out and drilling;
- d) Appropriate charging;
- e) Appropriate stemming with appropriate material such as sized gravel or stone chippings;
- f) Using delay detonation to ensure smaller maximum instantaneous charges (mics);
- g) Using decked charges and in-hole delays;
- h) Blast monitoring to enable adjustment of subsequent charges;
- i) Designing each blast to maximize its efficiency and reduce the transmission of vibration;

- j) Avoiding the use of exposed detonating cord on the surface in order to minimize air overpressure – if detonating cord is to be used in those cases where down-the-hole initiation techniques are not possible, it should be covered with a reasonable thickness of selected overburden.

Noise and vibration generated by the site during the assessment period can be considered transient. As such, remedial mitigation measures are not applicable.

10.6 Residual Impacts

There would have been no residual noise and vibration impacts as a result of the quarry operation during the substitute consent period. The residual impacts associated with the quarry operations during the substitute consent period would not have given rise to a significant increase above existing noise and vibration levels.

The noise and vibration effects for the operational phase can be summarised as follows:

- Noise from general onsite operations - Slight to moderate negative impacts, of momentary to temporary duration
- Noise from HGV movement on public roads - Negligible to slight negative impacts, of long term duration
- Blasting noise and vibration - Slight to moderate negative impacts of momentary duration

11 Landscape and Visual Impact

11.1 Introduction

This is the non-technical summary of the Landscape and Visual Impact Assessment Chapter of the remedial Environmental Impact Assessment Report (rEiAR) completed as part of the subsequent consent application for the quarrying related activities undertaken from 1990 to 2014 at the Ardcahan Quarry near Dunmanway, in West Cork.

The subject site was part of an established sandstone aggregate quarry located adjacent to an active macadam processing facility. Background information on the landscape and visual impact characteristics and status was obtained from a wide variety of National and European documents and online references as well as site visits.

The site was originally owned by Cork County Council and then operated by McSweeney Bros prior to Murray Bros taking over the quarry in the late 1990's. The macadam plant was opened on the site in 1999.

11.2 Existing Environment

The application site is located 3.5km northeast of Dunmanway, in West Cork Co, approximately 300 meters east of the regional road the R587. Dunmanway serves as the local population centre with smaller villages dispersed within the wider area.

The site is located in a rural setting characterised by undulating topography, irregularly shaped fields and clusters of mixed woodland. The land immediately around the quarry consists of scrub, woodland and agricultural grassland. Land uses in the surrounding area primarily comprise livestock farming and rural housing.

The nearest dwellings to the quarry site are located approximately 300m south; 275m west; 450m north and 400m east of the site. There are no commercial premises or community facilities in the immediate environs.

11.3 Summary of Landscape Characteristics

The wider landscape in 1990 would have had a similar character to that of today. The gently undulating farming landscape characteristic of the area would also have been characteristic of the area in 1990. The rural character in 1990 may have been stronger than it is today, with less traffic on the R587 and less residential development. A much larger extent of Clashnagallagh Wood would have been present and this would have informed the local landscape character in a positive way.

The Bandon River Special Areas of Conservation (SAC) is located to the west of the site. The small watercourse which borders the eastern and southern side of the site is a tributary of the Bandon River and forms part of the SAC from about 40m to the southwest of the site.

11.4 Potential Impacts

This development relates to the construction of a quarry. As the Construction Phase and the Operation Phase concern the transportation of soil and materials these activities are similar in visual respects. Construction Phase impacts include:

- Excavation and removal of soils and vegetation and trees
- Construction of any internal roads
- Construction of settlement ponds
- Construction of berms

11.5 Mitigation Measures

Many of the exposed quarry faces are hidden from view owing to the angle of the receptors, the sunken nature of the quarry and the intervening vegetation. Screening vegetation as well as raised berms along the southern boundary and south-western boundaries should be retained undisturbed to restrict views from the nearby receptors.

These berms and their associated planting were inspected as part of this report. Screen planting at these locations is developing well and needs to be retained to enable their screening function. These berms merge with the existing hedgerows and peripheral scrub vegetation lending a consistent naturalistic appearance when viewed from a distance.

11.6 Conclusions

The impact assessment of the completed construction and operational quarry works from 1990 to 2014 does not result in any significant negative effects on the Landscape and Visual attributes that have occurred due to the site activities.

Taking the implemented mitigation measures into account, the final residual impact for the Landscape Character assets is rated to be **Moderate-Slight**.

Overall, the development has had a Slight or Imperceptible impact to the pre-existing views (visual impact) of the majority of receptors found within the study zone. For the 9 No. views examined,

- 3 are deemed Imperceptible
- 3 are deemed Slight and Neutral

- 2 are deemed Moderate Negative tending to Slight Neutral as intervening vegetation has developed
- 1 is deemed Slight Negative tending to Slight Positive as intervening vegetation has matured

12 Traffic and Transportation

12.1 Introduction

The purpose of this chapter is to assess the retrospective traffic impact assessment of the additional traffic movements that were generated by construction and operation at Ardcahan Quarry, which is located on the L4621 road in the townland of Ardcahan, Dunmanway. The site is located off the regional R587 Dunmanway to Macroom road approximately 3km from Dunmanway and 27km from Macroom.

The most likely route for HGV's to (and from) the development site is from the Dunmanway direction along the R587, followed by a right turn at the priority junction with L4621. This junction has standard geometry with 2 x 3.5m wide lanes on the R587 with wide splays turning onto the L4621 with comprises of 2 x 3.0m lanes. It is the responsibility of Cork County Council to maintain the surrounding road network and complete resurfacing works on an ad-hoc basis as required. Specific details on any maintenance work completed in the area by Cork County Council between the years 1990 – 2014 is unavailable, but it is known that material from the quarry and macadam plant would have been used in local road construction/maintenance.

12.2 Existing Environment

Trip generation estimates provided by the Client for the development, indicate the peak hours of activity for the development in 2014 were 08:00 - 09:00, which aligns with the AM peak hours for the surrounding road network. As background traffic flows also peak during this period it was selected as the time period on which to base the traffic impact assessment for the development.

Annual traffic flows were not recorded for the surrounding road networks adjacent to the site for the year of 2014. However, Cork County Council provided an Annual Average Daily Traffic (AADT) data of 4,500 vehicles with a 6.5% HGV content for the R587 which was recorded in 2014 when the quarry was fully operational. The AADT provided was measured at different stages over the previous years but was deemed to be a reasonable estimate for the purposes of analysis.

A review of continuous Automatic Traffic Count (ATC's) sites maintained by Transport Infrastructure Ireland (TII), would suggest that a count on the N71 located to the south of Dunmanway and the N22 located to the north of the development are the most appropriate available sources of continuous seasonal traffic count data.

As there are no recorded traffic counts on the study road network for the retrospective assessment year of 2014, and the TII ATC traffic count data extends back until 2013 only, assumptions were required to be made with regards the background traffic flows that would have existed on the study network in the assessment years of 1990 to 2014.

12.3 Potential Impacts

Using the figures generated for development traffic and the extrapolated Annual Average Daily Traffic for the years 1990 to 2014, the impact of the local network could be assessed.

The impact on the local network for the peak hour of 08:00-09:00 was determined for the last year the site was in operation, 2014. For the previous years, 2013 to 1990, a broader, all day review was taken on the impact of the network.

The key points to notes are below;

- Heavy lorry access to the quarry is solely from the R587 with a prohibition of HGV's on the minor L4621 Hospital Road south of the site entrance location.
- Cork County Council provided an AADT of 4,500 vehicles (for 2014) on the R587 which broadly corresponds to measured peak hour flows being approximately 10% of the Annual Average Daily Traffic (AADT) flow.
- The maximum increase at the R587/L4621 junction in the year 2014 due to the development is estimated to have been +8.7% which occurred during the AM peak hour of 08:00-09:00.
- In 2014, the increase in traffic for the R587/L4621 throughout the day was +2.3%.
- The maximum daily increase in traffic generated by the development was +4.5% in 2006 & 2007, prior to the economic recession taking hold in 2008.

The assessment outlined in this section for the years 1990 - 2014 concludes that the relatively low volumes of traffic generated by the development would have had a slight impact on the surrounding local network. The surrounding road network would have operated well within capacity from 1990 up to the year 2014.

13 Material Assets – Services, Infrastructure and Utilities

13.1 Introduction

The purpose of this chapter is to assess the potential impacts which have occurred, are occurring or which can reasonably be expected to occur on material assets, including the existing utility network which includes the following infrastructure:

- Surface Water Drainage
- Foul Water Drainage
- Water Supply
- Electricity Supply
- Natural Gas
- Telecoms

Resources that are valued and that are intrinsic to specific places are called “material assets”. They may be either human or natural origin and the value may arise for either economic or cultural reasons. This chapter is intended to deal with the physical resource in the environment which may be of either human or natural origin. The objective of the assessment is to ensure that these assets are used in a sustainable manner, so that they are available for future generations, after the delivery of the development.

13.2 Assessment of Potential Impacts

Potential impacts are assessed for Construction and Operation. Activities which took place at the quarry for the relevant period and which can be described as construction related include;

- Excavation and removal of topsoils and vegetation.
- Construction of settlement ponds.
- Construction of berm.

Operational Activities are identified as;

- Blasting and drilling.
- Crushing and Screening.
- Stockpiling of overburden.
- Discharge of water to settlement ponds.
- Transportation of aggregates to and from site.

Construction activity and the operation of the quarry between 1990 and 2014 would have resulted in increased demand on utilities servicing the quarry. Potential impacts as a result of blasting are also considered in Chapter 10 Noise and Vibration. However, there is no evidence that construction and operational activities had any significant negative impact on services, either within or in proximity to the quarry.

No effects on services or utilities that are ongoing or are reasonably likely to occur as a result of quarrying activity that took place between 1990 and 2014 have been identified.

13.2.1 Electricity

The activities which took place at the quarry between 1990 and 2014 are not anticipated to have resulted in a significant demand for power. There are no historical reports of interruptions to supply for the wider area. Any works which may have been required to the electrical network during the assessment period would have been carried out according to ESB Network Guidelines

13.2.2 Gas

There is no gas supply to the site, and there are no gas distribution pipelines within or in proximity to the quarry. The closest gas pipeline is c. 10km to the east of the quarry. The construction and operation of the quarry would not have had any impacts on Gas services or Gas networks in proximity.

13.2.3 Water

The quarry benefits from its own well, and no significant demands on water supply have been identified. Potential impacts on hydrology.

13.2.4 Surface Water and Foul Water

The impacts on surface water and foul water services are also assessed in Chapter 7: Water. No significant negative impacts have been identified.

13.2.5 Telecoms

The communications network servicing the site diversified from landline to mobile phone and internet up to 2014. It is noted that the 2003 Cork County Development Plan included an objective to support a programme of broadband connectivity throughout the county (Objective INF 4-8). There is no evidence that any significant negative impacts on telecommunications at the site or wider area occurred as a result of construction and operations at the quarry between 1990 and 2014.

13.3 Risk of Major Accidents and Disasters

No risk of impacts to services has been identified.

13.4 Cumulative

A number of developments, mainly residential, can be expected to have taken place in proximity to Ardcahan Quarry between 1990 and 2014. Any impacts on water supply, foul and surface water

drainage and utilities/telecommunications are expected to be imperceptible as the nearby developments would have separate private water supply and surface/wastewater treatment and utilities/telecommunications. The macadam plant would have operated simultaneously with the quarry between 1998 (after permission was granted for the macadam plant) and 2014 and used the existing services and utilities at the site. No significant cumulative impacts have been identified as a result.

13.5 Remedial Measures

No significant impacts on services, utilities or infrastructure have been identified and remedial measures are not required.

13.6 Monitoring

None proposed other than any general ESB and water metering and monitoring arrangements which are currently in place.

13.7 Residual Impacts

No residual impacts on services or utilities have been identified as a result of the construction and operation of the quarry between 1990 and 2014.

14 Biodiversity

The remedial assessment of Biodiversity was undertaken by Malone O'Regan Environmental ('MOR Environmental') and is contained in Chapter 14 of Volume II of this remedial EIAR. The assessment focuses on how flora and fauna were impacted during the construction and operation phases of the works undertaken at Ardcahan Quarry, Dunmanway, Co. Cork between 1990 and 2014. A comprehensive suite of ecological surveys and assessments were conducted at the Site in line with best practice guidance.

A separate remedial Natura Impact Statement ('rNIS') has been produced, which evaluates the likely significant effects of historic operations on the Bandon River SAC. The rNIS accompanies this application as a separate document and should be read in conjunction with Chapter 14. From the assessment, it is concluded that the development has not resulted in any significant impacts on the integrity or qualifying interest of any Natura 2000 sites to date, either on its own or in combination with other plans / projects.

Natural Heritage Areas ('NHA') and proposed Natural Heritage Areas ('pNHA') within 5km of the Site were also considered. No NHAs were identified within 5km of the Site. However, one pNHA was identified within 5km of the Site - Bandon Valley South of Dunmanway pNHA.

14.1 Habitats

It is considered that the main effects of the Development on habitats on-site were the removal and reduction of habitats such as deciduous woodland, dry heath, wet grassland and improved agricultural grassland. As such, active quarry and mine, spoil and bare ground, scrub, dystrophic lakes and artificial lakes were created due to the Development.

The development caused the loss of two Annex I habitats listed under the EU Habitats Directive - Existing Oak-Birch-Holly woodland (historically recorded as Clashnagallagh wood) and Dry Siliceous Heath. These habitats correspond to Annex I Old Sessile Oak Woods with Ilex and Blechnum (91A0) and Annex I European Dry Heaths (4030).

14.2 Fauna

The National Biodiversity Data Centre (NBDC) provides records of species within 2km of the site, offering a historical context. It was considered that the habitats removed over the period of substitute consent would have been suitable for a number of notable species, including badger, birds, bats, pine marten, red squirrel, Irish stoat and otter. Additionally, it is considered likely that the Development caused the introduction of invasive species on-site.

Following the initial assessment of the Site and to ensure a comprehensive assessment of the potential impacts of the Development, the following surveys were undertaken:

- Amphibian Surveys;
- Bat Surveys;
- Breeding Bird Surveys;
- Freshwater Pearl Mussel Surveys;
- Peregrine Falcon Surveys
- Wintering Bird Surveys; and,
- Invasive Species Survey.

It is considered that the Development created habitat for amphibians and peregrine falcon (Annex I of the EU Birds Directive).

Overall, the site has high local ecological value for fauna due to the presence of established woodland, scrub, heath/wet grassland/dense bracken mosaic, quarry and dystrophic lakes.

The proposed remedial measures on-site will not impact the species currently utilising the Site.

14.3 Residual Effects

The Development had a significant negative permanent effect on two nationally important Annex I habitats - Oak-Birch-Holly woodland and Dry Siliceous Heath.

The 1990–2014 quarry development has not been found to have any significant effects on other habitats on-site, fauna or designated areas. New features including exposed quarry cliff faces and dystrophic lakes have also been created as a result of habitat change, adding to the site's biological diversity.

Additionally, remediation and enhancement measures are proposed to be carried out throughout the site including:

- Remediation Landscape Plan;
- Hibernacula and habitat piles;
- Protection measures for breeding birds;
- Protection measures for Peregrine Falcon;
- Artificial bat boxes;
- Invasive species management plan;
- Ecological Clerk of Works ('ECOW') Monitoring.

14.4 Statement of the Significant Negative Effects on the Environment

The established Oak-Birch-Holly woodland associated with Annex I Old Sessile Oak Woods with Ilex and Blechnum (91A0) and Dry Siliceous Heath associated with Annex I European Dry Heaths (4030) were both permanently lost as a result of the activities between 1990-2014. These habitats are deemed to

be nationally significant habitats that cannot be replaced or restored. Therefore, the consequences of losing both habitats are regarded as significant, adverse and permanent.

A Remediation Plan has been prepared by Cathal O'Meara Landscape Architects. The plan provides details of proposed landscaping, including planting, biodiversity and management measures.

15 Cultural Heritage and Archaeology

15.1 Introduction

Chapter 14 of the EIAR identifies the direct and indirect impacts that have occurred, are occurring, or may reasonably be expected to occur on archaeological, architectural and cultural heritage within the Substitute Consent Area (SCA) at Ardcahan as a result of quarrying and associated works undertaken between 1990 and 2014.

15.2 Existing Environment

There are no recorded archaeological sites within the SCA or the wider Land Ownership Boundary (LOB). The nearest recorded archaeological sites are a ringfort (CO108-001) c.250m to the east, and an enclosure and burial ground (CO108-002001/002) c.350m to the east in Dromerk townland. Twenty-two recorded monuments lie within a 2km radius, eight of which are located within 1km of the quarry. No Protected Structures or NIAH-listed buildings are located within the SCA, LOB or the surrounding study area.

15.3 Impact Assessment

15.3.1 Do-Nothing Scenario

Without quarrying, previously unknown archaeological deposits may have survived beneath natural ground cover, and the upland character recorded on 19th century mapping would likely remain intact.

15.3.2 Construction Phase (1990–2014)

Construction and quarrying works undertaken between 1990 and 2014 included removal of vegetation and topsoil, establishment of access and hardstanding, creation of settlement ponds and other ancillary works.

15.4 Statement on Significant Effects

15.4.1 Effects Which Have Occurred

15.4.1.1 Archaeology

No known archaeological sites were impacted. However, ground reduction and topsoil stripping would have removed any previously unknown archaeological features. As no archaeological testing or monitoring took place, the extent of loss cannot be determined.

Such loss represents a Direct, Negative and Permanent impact on a finite archaeological resource, though it is also possible that no archaeology was present on the site. Some areas of scrub remain undisturbed and may retain intact archaeological deposits.

15.4.1.2 Architecture

No Protected Structures or NIAH-listed buildings are located within the SCA or LOB.

No effects on architectural heritage have occurred.

15.4.1.3 Cultural Heritage

Quarrying removed remaining vegetation and altered the upland landform, permanently erasing the rugged topography shown on 19th century mapping. This change has reduced the ability of the modern landscape to express the upland qualities reflected in placenames such as Ardcahan ('high land of the River Caha'). This constitutes a Negative, Significant and Long-Term effect on the cultural heritage of the area.

15.4.2 Effects Which Are Occurring

No ongoing direct or indirect impacts are arising, as a result of construction works within the SCA between 1994 and 2014.

15.4.3 Effects Which Can Reasonably Be Expected to Occur

No additional direct or indirect significant effects are reasonably expected to occur as a result of construction works within the SCA between 1994 and 2014.

15.4.4 Operational Phase (1990-2014)

Operational activities during the use of the quarry included blasting and drilling, crushing and screening of rock, stockpiling or overburden, discharge of water to settlement ponds and vehicle movements to and from the site.

No direct or indirect significant effects on archaeological, architectural or cultural heritage have occurred, are occurring, or are expected to occur as a result of these operational activities.

15.5 Visual Impacts

Construction and quarrying within the SCA between 1994 and 2014 have not resulted in any significant visual effects on known archaeological or architectural sites. The nearest recorded monuments either lack above-ground expression or are screened from view, and only an imperceptible indirect effect was identified at Caha Bridge c.400m west of the quarry.

In contrast, the removal of vegetation and alteration of upland landform has had a Negative, Significant and Long-Term visual effect on the wider cultural landscape.

15.6 Conclusion

The primary effects relate to:

- Potential loss of unrecorded archaeological material in areas where ground disturbance occurred; and
- The Significant, Long-Term alteration of the historic cultural landscape caused by the removal of vegetation and landform modification.

No significant effects have occurred, are occurring, or are expected to occur in relation to architectural heritage.

16 Significant Interactions of Impacts

The construction, operational and cumulative impacts of the development have been assessed within each chapter of the rEIAR. This chapter describes the significant interactions of impacts identified in the previous chapters.

All potential inter-relationships impacts between the various areas covered in the rEIAR are listed and the key interactions and interrelationships are summarised. Significant interactions are highlighted and remediation/mitigation measures outlined where required.

A schedule of proposed mitigation measures and monitoring measures is presented in Chapter 16.

16.1 Identification of Significant Interactions

16.1.1 Conclusion

Land (Soils and Geology) and Biodiversity: Quarrying activity within the substitute consent area during the 1990-2014 period resulted in the permanent loss of established old Oak-Birch-Holly woodland (Clashnagallagh wood) that likely corresponded to Annex I Old Sessile Oak Woods with Ilex and Blechnum (91A0), along with the loss of Dry Siliceous Heath that likely corresponded to Annex I European Dry Heaths (4030). Both habitats are evaluated as nationally important biodiversity features that cannot be replaced or restored in this case. The effects arising from the loss of both habitat features is therefore considered as significant adverse permanent.

Land (Soils and Geology) and Cultural Heritage: Construction works within the SCA between 1994 and 2014 have had a negative, significant, and long term effect on the cultural landscape of the SCA and surrounding area as a result of the loss of Clashnagallagh Wood and the change to the natural rugged landscape.

A landscape remediation plan has been proposed which includes replanting native woodland. The biodiversity chapter also sets out measures to allow underlying Dry Heath habitat an opportunity to naturally regenerate in areas where Dry Heath existed at the north-eastern spoil/other storage area.

17 Schedule of Mitigation/Remediation and Monitoring

Chapter 16 of the Environmental Impact Assessment provides a summary of the mitigation and remediation measures proposed for each discipline throughout the rEIAR document. Monitoring provides assurance that proposed systems are operating as intended