November 2024

Plazamont Ltd. T/A Dan Morrissey & Co.

Environmental Impact Assessment ('EIAR') Volume 3 – Appendices 1, 3, 6, 7 & 8

Continuance of Use & Extension to Ballyburn Pit

On behalf of

Dan Morrissey & Co. (Plazamount Ltd)

Ballyburn Upper, Gorteenvacan, Knockbane, Castledermot, Co. Kildare

MALONE O'REGAN ENVIRONMENTAL

QUALITY I.S. EN ISO 9001:2015 NSAI Certified

MALONE O'REGAN

Form ES - 04

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Title: Environmental Impact Assessment ('EIAR') Volume 3 – Appendices 1, 3, 6, 7 & 8, Continuance of Use & Extension to Ballyburn Pit, Dan Morrissey & Co. (Plazamount Ltd), Ballyburn Upper, Gorteenvacan, Knockbane, Castledermot, Co. Kildare

Job Number: E2122

Prepared By: Caoimhe Fox **Signed:** _____

Checked By: David Dwyer **Signed:** _____

Approved By: Kenneth Goodwin **Signed:** _____

Revision Record

Issue No.	Date	Description	Remark	Prepared	Checked	Approved
01	13/11/24	Report	FINAL	CF	DD	KG

Environmental Impact Assessment ('EIAR') Volume 3 – Appendices 1, 3, 6, 7 & 8

Continuance of Use & Extension to Ballyburn Pit

Dan Morrissey & Co. (Plazamount Ltd)

Ballyburn Upper, Gorteenvacan, Knockbane, Castledermot, Co. Kildare

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November 2023

Environmental Impact Assessment (EIA) Scoping Report

Extension to Ballyburn Quarry, Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare

On behalf of

Dan Morrissey & Co

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Title: Environmental Impact Assessment (EIA) Scoping Report, Extension to Ballyburn Quarry, Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare, on behalf of Dan Morrissey & Co (Plazamount Ltd).

Job Number: E2122

Prepared By: Kevin Dowds **Signed:** _____

Checked By: David Dwyer **Signed:** _____

Approved By: Kenneth Goodwin **Signed:** _____

Revision Record

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Environmental Impact Assessment (EIA) Scoping Report

Extension to Ballyburn Quarry, Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare

On behalf of

Dan Morrissey & Co (Plazamount Ltd)

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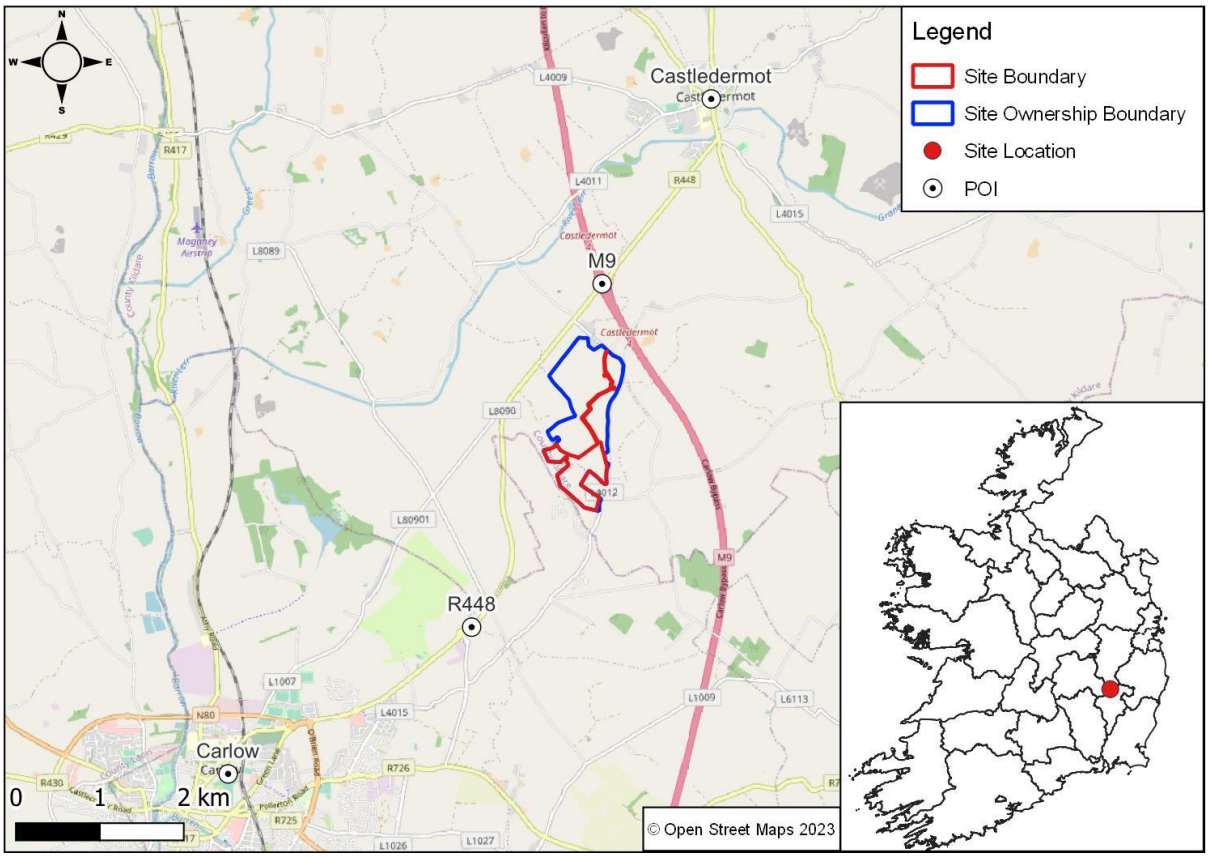
Malone O'Regan Environmental (MOR) has been commissioned by Dan Morrissey & Co. (Plazamount Ltd) to prepare an Environmental Impact Assessment Report (EIAR) in support of a planning application to Kildare County Council for a proposed extension to the Ballyburn Quarry, Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co Kildare (the Proposed Development).

The existing quarry is located approximately 4.3km south southeast of Castledermot Town, Co. Kildare and approximately 4.0km northwest of Carlow Town. The site covers an area of ca. 30ha (ITM centre coordinates X:676639, Y680724) and generally extends in a southerly direction from the existing quarry (henceforth referred to as the Site). Figure 1-1 illustrates the location of the Site along with the lands owned by the applicant, most of which forms part of the existing Ballyburn Quarry.

Figure 1-1: Site Location



The Site will extend the existing quarry into land to the southeast. These lands are currently owned by the Applicant and are in agricultural use.

This document outlines the Site details and the methodology and the guidance documents to be utilised to prepare the EIAR which will form part of the planning application.

1.1 Applicant

The Applicant Dan Morrissey & Co. (Plazamount Ltd.) (hereafter referred to as the Applicant) is an established business and supplier of aggregates and concrete to the construction industry. Plazamount Ltd. trading as Dan Morrisey & Co. is run by the Morrisey family. The family has been synonymous with quality and quarrying in the southeast region for three generations. Dan Morrisey started quarrying in Ballycrigue Co. Carlow in the 1930's and the business has grown and developed exponentially since. The Applicant is one of the biggest independent suppliers of aggregate materials in the Irish construction industry.

The Applicant extracts sand and gravel and produces a wide range of high specification aggregates including ready mix and concrete blocks, quarry stone, tarmacadam, surface dressings and tiles from its quarries in counties Carlow, Kildare, and Wicklow. These high specification aggregate products are made to a wide range of aggregate quality standards.

1.2 Existing Development

The Ballyburn Quarry originally commenced operations in 2012 under Planning Reference(s) 05/2091 and An Bord Pleanála PL09.220222. However, following the economic downturn, operations ceased for several years before recommencing in 2019.

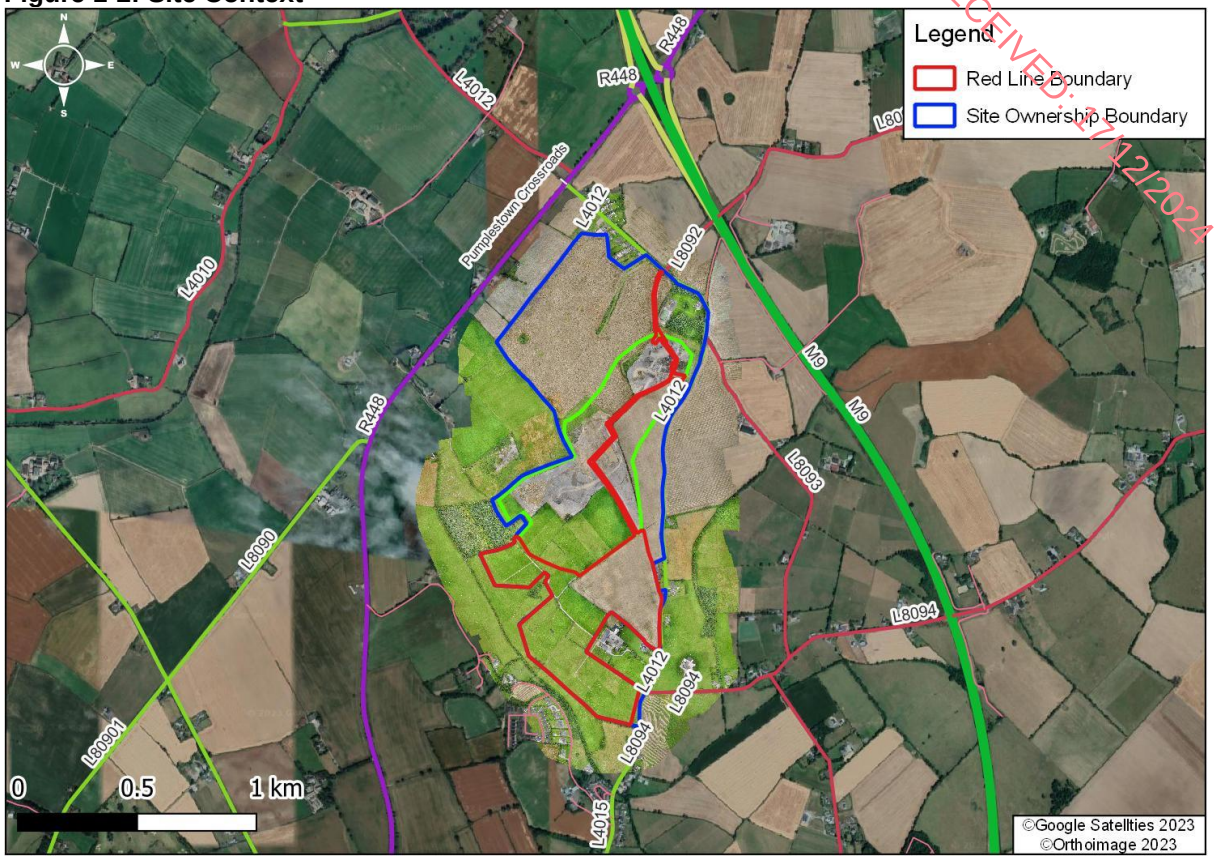
Ballyburn Quarry contains high quality sand and gravel reserves, which has NSAI certification for use in concrete and precast, and aggregate products such as 803 and 804. The Applicant supplies both locally and to Britain from Ballyburn Quarry, with notable developments such as the children's hospital and Irish Rail receiving essential aggregates from this quarry. Ballyburn Quarry won "Quarry of the Year" in 2021 from the Machinery Movers Industry and Operator Awards in relation to its environmental performance and initiatives.

Ballyburn Quarry is served well by suitable infrastructure, as the M9 motorway, connecting Dublin to Waterford is readily accessible via the L4012 and R448. There are linear residential dwellings present along the local and regional roads, with further housing present to the south-east. In general terms, Ballyburn Quarry is in an area primarily used for agricultural purposes.

Plate 1-1: Ballyburn Primary Quarry Entrance

The primary access to Ballyburn Quarry is via an existing entrance off the L4012 local road (Refer to Plate 1-1 above). This road joins the R448 regional road at the Prumplestown Crossroads ca. 530m to the northwest of the Site entrance. From the Prumplestown Crossroads the M9 is accessed at Junction 4, ca. 450 m to the north, refer to Figure 1-2 below.

Figure 1-2: Site Context

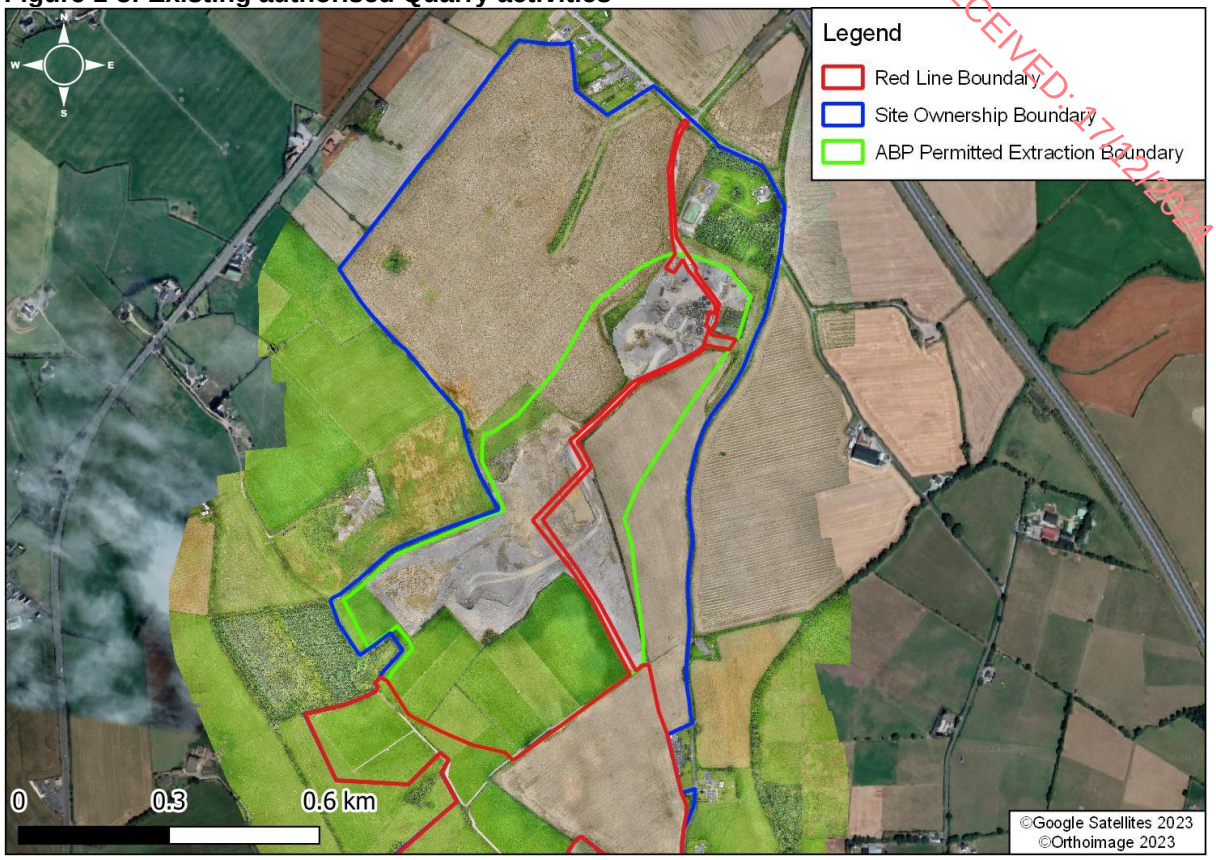


Existing quarry operations involve the extraction and screening of aggregate materials with a maximum output of ca.450,000 tonnes excavated, processed, and transported to market on an annual basis. Ballyburn Quarry is subject to conditions of planning which manages emission such as noise and dust within specified limits. Ballyburn Quarry operates above the local winter groundwater table.

Ballyburn Quarry presently utilises mobile machinery to work the pit face, consisting of excavators, loading shovels and articulated dump trucks to transport aggregates to the processing area to satisfy end use requirements. Internal quarry trafficked routes are maintained to a high standard.

The existing authorised activities are shown in Figure 1-3 below.

Figure 1-3: Existing authorised Quarry activities



1.3 Description of the Proposed Development

The Proposed Development is for the extension of the existing quarry into available lands to the south-eastern portion of the existing land ownership boundary (red line in Figure 1-2 above). The Proposed Development will represent an extension, to provide access to known quality aggregates, rather than an intensification of existing operational activities.

Extraction associated with the Proposed Development will be consistent with the existing permitted levels at the Ballyburn Quarry, with a maximum output of 450,000 tonnes/annum. This extraction and output rate from the Proposed Development is very much dependant on market conditions, which are more likely to fluctuate rather than achieve maximum output, year after year.

Topsoil and overburden removed as part of the scheme, will be used to construct 2m high berms around the periphery of the Site, and will be planted with a grass mix to preserve its integrity for future use in the restoration phase. No sand and gravel extraction will take place below the existing water table at the Site, with an anticipated finished depth across the Site of 71maOD (Malin), ca. 2-6m above the existing water level. Moreover, the Proposed Development will leave ca. 6m-17m of overburden above the bedrock across the Site.

The proposed extension will consist of approximately 30-hectares containing ca. 1.6 million m^3 (or 3.01 million tonnes) of extractable aggregates of extractable sand and gravel.

The Proposed Development will comprise 3 (No.) distinct stages:

- Construction Stage: Removal of topsoil and overburden and construction of berms;
- Operational Stage: Aggregate Extraction and Processing; and,
- Restoration Stage: Restoring the topsoil, reseeding, and replanting historic hedgerows.

Planning permission is being sought for 15 years.

Plant to be used onsite will incorporate the existing plant and machinery, which includes:

- Loading Shovel x2;
- Crushing & Screening Plant
- Articulated dump truck x2;
- Long arm excavator;
- Road sweeper;
- Screening plant;

The Proposed Development will not require any new or additional plant or machinery. The Proposed Development will not require the addition of water, wastewater, or electricity. Surface water from lagoons onsite is utilised to supply dust suppression along the existing haul road, fill the existing truck wheel wash and, if necessary, a mobile bowser for spraying over aggregate stockpiles. Process well 1 (PW1) located within in the north western portion of the site boundary will facilitate the onsite welfare facilities and toping up of the surface water lagoon during dry periods. A road sweeper is available to maintain public roads in the event dust/debris leaves the quarry.

The Proposed Development will maintain a 10m buffer from all third-party properties. The berms will be constructed within this buffer zone.

Extracted material will be stockpiled on-site, prior to processing, loading and transportation off-site.

Operational hours associated with the Proposed Development will be unchanged from existing operational hours of 07:00am to 06:00pm Monday to Friday inclusive and 07:00am to 02:00pm on Saturdays. There will be no change to the existing staffing structures, and therefore employee welfare facilities are not proposed to be changed.

The nature of the development results in the production of no significant waste. Soils and topsoil removed during the construction phase works will be stockpiled and covered in grass seed and utilised in the restoration phase for the restoration of the lands. There is a canteen in the existing quarry, therefore their associated waste arising from employees is stored onsite in wheelie bins and collected by a licenced contractor which is disposed/recycled off site at appropriate licenced facilities. These practices will be unchanged as per existing practices at Ballyburn Quarry.

Upon closure of Site operations, the intention for the Applicant is to restore the land to its current agricultural use with some biodiversity enhancement. The reinstatement will involve reinstating the current field boundaries and a multi-species sward will be sown along the peripheries of the Site.

2 LEGAL AND PLANNING CONTEXT

2.1 Legal Context

The Planning and Development Act 2000 (as amended) forms the foundations for planning regulation in Ireland. This Act covers a large range of planning-related issues and combines a wide range of legislation under its guidance in one place.

The specific requirements for planning development are outlined within the Planning and Development Regulations 2001 as amended. These Regulations implement the Planning and Development Act, 2000. They consolidate all previous Regulations and replace the Local Government (Planning and Development) Regulations 1994-2000.

On 14th April 2014, the EIA Directive (2014/52/EU) was adopted, amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. The directive was transposed into Irish law through Statutory Instrument S.I. No. 296 of 2018 with a commencement dated 1st September 2018.

Developments that require EIA are specified in Schedule 5 of the Planning and Development Regulations 2001 (as amended), as follows:

- Schedule 5 sets out the criteria for assessing whether a mandatory EIA is required for a development. It transposes Annex I and Annex II of the EU EIA Directive (85/337/ECC as amended) into Irish law under Parts 1 and 2 of the schedules.

There are no new criteria for EIA projects under the 2014/52/EU Directive.

Schedule 7 sets out the criteria for assessing whether a project is likely to have “likely” and “significant” effects on the environment, in which case an EIA is also required where the proposed project or development is listed under Schedule 5 but is not mandatory under Part II thresholds. These criteria include the following:

- “Characteristics of proposed development;”
- “Location of proposed development;” and,
- “Characteristics of potential impacts.”

The Environmental Impact Assessment Report is the document prepared by the proposer of a project setting out the effects (both positive and negative) that the proposed development would have on the environment.

2.2 Planning Context and Zoning

The land is outside the Local Area Plans developed and proposed within Kildare, and there is no specific zoning identified within the county wide Kildare County Development Plan (CDP) 2023-2029 for the Site.

A review of the planning history for the Site will be conducted as part of the EIAR. From a high-level review of the Kildare County Council Planning enquiry viewer map and a review of the applicant’s files, the below site-specific planning is known.

An application for planning with an Environmental Impact Statement was submitted to Kildare County Council, planning reference 05/2091 seeking permission for a proposed sand and gravel pit and concrete / mortar manufacturing facility. Planning for the quarry was granted in 2007 under planning reference 05/2091 on appeal to An Bord Pleanála, in which the existing quarry operates. The concrete / mortar manufacturing facility was never constructed. The existing permitted activities boundary granted under 05/2091 are shown in Figure 1-3 above.

2.2.1 Planning Policies & Guidance

The following national, regional and local policies and guidance will be reviewed:

- Project Ireland 2040, National Planning Framework; [1]
- National Development Plan 2021-2030; [2]
- Regional Spatial and Economic Strategy for the Eastern and Midlands Region 2019; [3]
- Kildare County Development Plan, 2023 – 2029; [4]
- The Planning System and Flood Risk Management – Guidelines for Planning Authorities (2009); [5]
- Sections 261 of the Planning and Development Act 2000 (as amended); [6]
- Environmental Management Guidelines – Environmental Management in the Extractive Industry; [7]
- Quarry and Ancillary Activities – Guidelines for Planning Authorities; [8]
- Irish Concrete Federation (2009) Environmental Code: Second Edition; [9]
- Geological Heritage Guidelines for the Extractive Industry – Geological Survey of Ireland; [10]
- Code of Practice between the department of the Environment, Heritage and Local Government and the Irish Concrete Federation 2009; [11]
- Irish Concrete Federation Essential Aggregates Providing for Ireland's Needs To 2040; [12]

Guidance specific to the individual chapters of the EIAR will be listed in section 3 below.

3 ENVIRONMENTAL IMPACT ASSESSMENT

3.1 Proposed Structure and Contents of EIAR

The EIAR will be prepared in accordance with the following guidance documents:

- EU Guidance Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report [13];
- EPA Advice notes on current practice in the preparation of Environmental Impact Statements [14]; and
- EPA Guidelines on the Information to be contained in Environmental Impact Assessment Reports(2022) [15].

The EIAR will contain the following key sections:

Non-Technical Summary

An overview of the proposed extension, its location, the identity of the applicant, and the reason the EIAR was prepared. The Non-Technical Summary is a review of the main EIAR text to enable clear identification of significant impacts, relevant mitigation measures where required and the residual impacts.

Description of the Proposed Extension

A full description of the Proposed Development in physical and functional terms during the Site preparation, operational and restoration stages.

Main Alternatives Considered

A summary of the alternatives considered in respect of the proposal and environmental aspects will be included within the EIAR, including alternative site layout and site use.

Assessment of Environmental Impacts

The significance of the impact of the Proposed Development on various aspects of the environment will be assessed under the headings set out in section 3.2.

3.2 Aspects of the Environment Considered in the EIAR

The EIAR will address the following environmental aspects:

- Population and Human Health;
- Biodiversity;
- Air Quality;
- Climate;
- Water (Hydrology and Hydrogeology),
- Lands, Soils and Geology;
- Noise and Vibration;
- Landscape and Visual Impacts;
- Cultural Heritage;
- Material Assets including traffic and waste; and
- Interaction of the above.

As far as practicable, the examination of each aspect of the environment will be undertaken as follows:

- The Receiving Environment (“baseline”) - A description of the specific receiving environment into which the proposed extension will fit.

- The Characteristics of the Site - A projection of the specific "load" on each particular aspect of the environment which the Proposed Development would be likely to generate.
- The Potential Effects of the Proposed Development - A general description of the probable or 'likely' effects which the Proposed Development would be likely to produce.
- Cumulative Effects of the Proposed Development – The cumulative effects of the development will be assessed where relevant.
- Mitigation Measures - A description of any specific remedial or reductive measures considered necessary and practicable, resulting from the assessment of potential effects.
- Residual Effects of the Proposed Development - The assessment of the significance of direct and indirect effects of the proposed extension arrived at after mitigation measures have been employed.
- Interactions - A description of interactions of each environmental discipline with other environmental attributes.
- Monitoring - A description of any monitoring of effects on the environment which might be necessary, covering the monitoring methods and the agencies responsible for their implementation.
- Reinstatement - Where required, a description of reinstatement measures and the agencies responsible for their implementation.
- Difficulties Encountered - An indication of the difficulties encountered, if any, during the compilation of information.

3.3 Description of the Proposed Assessments

3.3.1 Population and Human Health

An assessment of the local population and the sensitivity of the receiving environment to the Proposed Development will be assessed in accordance with the Institute of Public Health Impact Assessment Guidance and the IEMA guidance for Determining Significance for Human Health in Environmental Impact Assessments.

The Proposed Development does present potential for effects on human health through various mediums (air, water, soil, noise etc.). These effects will be assessed in detail in the respective chapters of air quality, climate, noise and vibration, water (hydrology and hydrogeology), and lands and soils.

The Proposed Development will maintain direct employment for personnel currently working at the Ballyburn Quarry in the medium term. However, no significant additional direct employment is expected from this application.

3.3.2 Biodiversity

This chapter of the EIAR aims to establish the baseline ecological status of the Site and its immediate surroundings and to assess the potential effects of the Proposed Development on biodiversity. A detailed ecological appraisal will be carried out by a suitably qualified MOR Ecologist in line with '*Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine'* (2018 and revisions).

As a starting point, the following parameters will be used for the desk-based study: 2km for protected species, 15km for European sites and 5km for nationally protected sites. The desk-based study will involve a review of the following resources:

- Aerial maps of the Site and surrounding area;

- The National Parks and Wildlife Service (NPWS) website was consulted with regard to the most up to date detail on conservation objectives for the Natura 2000 sites relevant to this assessment (https://www.npws.ie/);
- The National Biodiversity Data Centre (NBDC) website was consulted with regard to species distributions (https://maps.biodiversityireland.ie/Map);
- The EPA Maps website was consulted to obtain details about watercourses in the vicinity of the Site (https://gis.epa.ie/EPAMaps/); and,
- The Kildare County Council Planning Portal was consulted to obtain details about existing / proposed developments in the vicinity of the Site Kildare County Council (kildarecoco.ie)

In addition, a habitat survey will be undertaken to assess the quality of the habitats on and bordering the Site and to identify the potential for these habitats to support other features of nature conservation importance such as species afforded legal protection under either Irish or European legislation. The habitat survey will be undertaken using *Fossitt's Guide to Habitats in Ireland* and will be conducted in line with the following guidance documents:

- Heritage Council's 'Best Practice Guidance for Habitat Survey & Mapping;'
- NRA, 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes;'
- DoAHG, *'Guidelines for the Protection of Biodiversity within the Extractive Industry;'*
- NRA, 'Ecological Surveying Techniques for Protected Flora and Fauna during the Planning of National Road Schemes;
- Scottish Badgers, 'Surveying for Badgers: Good Practice Guidelines,'
- The Mammal Society, *'Surveying Badgers*,' and,
- NRA, *'Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes.'*

The habitat survey will take full cognisance of any species protected under the Flora (Protection) Order 2022 (S.I. No. 235/2022) or listed on Ireland Red List No. 10: Vascular Plants [16].

The potential effect on biodiversity from the Proposed Development will be assessed to include all associated phases. The scale of activities onsite will be considered when determining the zone of influence. When identifying suitable mitigation measures for the protection of biodiversity against potential impacts arising from the Proposed Development, the following guidance will be referred to:

- C741 – 'Environmental Good Practice on Site (4th Edition)';
- NRA, 'Guidance for the Treatment of Badgers Prior to the Construction of National Road Schemes;'
- NRA, *'Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes;' and,*
- NRA, 'Guidance on the Management of Noxious Weeds and Non-Native Invasive Plant Species on National Roads.

The assessment shall also include a plan for the restoration / aftercare of the Site.

In addition to the EIAR, a Stage One: Screening for Appropriate Assessment (AA) will be undertaken to identify potential effects on European designated sites. The Screening for AA will be prepared in accordance with the following documents:

- European Commission Methodological Guidance on the provision of Article 6(3) and 6(4) of the 'Habitats' Directive 92/43/EEC;
- the European Commission Guidance 'Managing Natura 2000 Sites' and the OPR Guidance 'Appropriate Assessment. Screening for Development Management; and

- The Guidance for Planning Authorities published by the Department of Environment, Heritage, and Local Government.

3.3.3 Water (Hydrology and Hydrogeology)

Hydrology and hydrogeology are highly interlinked, and as such a comprehensive joined assessment is proposed to clearly lay out the in-combination effects. The EIAR will assess the potential effects of the proposed extension on both groundwater and nearby surface water.

The EIAR will present existing hydrogeological conditions at the Site and assess the potential effects posed by the Proposed Development, including current water management at the Ballyburn Quarry, local groundwater and any surface water bodies, groundwater abstractions for public/private supply and surface water features.

Hydro environmental will utilise the on-going and historic groundwater and surface water monitoring undertaken across the existing operational Ballyburn Quarry to develop the understanding of how the Proposed Development may interact with the environment.

Detailed site investigations will be carried out as part of the hydrogeological assessment of the Proposed Development which will include:

- A detailed site walkover/survey and water features survey will be completed, including geological mapping of bedrock and subsoil exposures, inspection and mapping of all relevant hydrological features, such as existing drainage ditches, streams and springs;
- A preliminary Flood Risk Assessment (FRA) for the Site and surrounding area;
- Additional groundwater monitoring wells will be drilled with completed geological logs around the perimeter of the Site;
- Collection and review of continuous groundwater level monitoring by means of in-situ data loggers;
- Sample and an analysis of groundwater quality from wells at the existing Quarry and the Site (including field hydrochemistry measurements;
- A topographic survey (differential Global Positioning System (dGPS)) was undertaken whereby the monitoring wells were surveyed;

The hydrogeological assessment will be conducted in accordance with all relevant guidelines, and suitable mitigation measures will be outlined where necessary to avoid significant effects on the water environment.

The following guidelines will be the guidelines used during the assessment:

- Institute of Geologists Ireland (IGI) Guidelines for Preparation of Soils, Geology & Hydrogeology Chapters in Environmental Impact Statements;
- National Roads Authority (NRA) Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes;
- CIRIA–C532 - Control of Water Pollution from Construction sites - Guidance for Consultants and Contractors;
- Department of Environment, Heritage and Local Government Quarries and Ancillary Activities - Guidance for Authorities;
- EPA Environmental Management in the Extractive Industry (Non-Scheduled Minerals);
- Groundwater Regulations 2010 (S.I. No. 9 of 2010) as amended (S.I. No. 149 of 2012 and S.I. No. 366 of 2016);
- Surface Water Regulations 2009 (S.I. No. 272 of 2009) as amended (S.I. No.327 of 2012 and S.I. No.386 of 2015 and S.I. No. 77 of 2019); and

- European Union (Drinking Water) Regulations 2014 (S.I. No. 122 of 2014) as amended (S.I. No. 464 of 2017 and S.I. No. 286 of 2022).

3.3.4 Land, Soils and Geology

The EIAR will assess the potential effects Proposed Development may have on the soils, geology and land use from the Proposed Development. A desk-based evaluation on soils and geology will be undertaken. The assessment will involve:

- characterisation of the receiving environment by completing a desk-based review of the existing ground conditions utilising published Geological Survey of Ireland (GSI) information and other publicly available information; and,
- The assessment will examine any proposed removal of topsoil, overburden and aggregates during the Proposed Development.

Detailed site investigations will be carried out as part of the assessment of the Proposed Development and will include:

- Walkover survey;
- Geological logging according to BS: 5930:2015 Code of Practice for Ground Investigations of four (4no.) new monitoring wells to assess that future operations of the Proposed Development extension area will be above the winter water table;
- Review of geo-physical surveys of the Site; and,
- Assessment of historical site investigation borehole logs within the existing Quarry.

The soils and geology assessment will be conducted in accordance with all relevant guidelines, and suitable mitigation measures will be outlined where necessary to avoid significant effects on the land, soils and geological environment. The following guidelines will be used for this assessment:

- Institute of Geologists Ireland (IGI) Guidelines for Preparation of Soils, Geology & Hydrogeology Chapters in Environmental Impact Statements;
- National Roads Authority (2008): Guidelines on Procedures for Assessment and Treatment of Geology, Hydrology and Hydrogeology for National Road Schemes;
- Department of Environment, Heritage, and Local Government: Quarries and Ancillary Activities - Guidance for Planning Authorities;
- EPA Environmental Management in the Extractive Industry (Non-Scheduled Minerals), and,
- Institute of Environmental Management & Assessment (IEMA) Guide: A New Perspective on Land and Soil in Environmental Impact Assessment

3.3.5 Air Quality

The potential effects on air quality will be assessed across all phases of the Proposed Development. A desk-based review of existing monitoring results will be conducted to better understand the air quality in the area. This will involve reviewing data collected by the Environmental Protection Agency as well as historical monitoring conducted onsite.

Bergerhoff dust monitoring at boundaries will be conducted to assess ambient levels associated with the baseline environment. A PM_{10} monitoring unit will be deployed (over a short time frame) to assess ambient levels of dust associated with the baseline environment.

The methodology proposed by the UK Institute of Air Quality Management (IAQM) in their Guidance on Mineral Dust for Planning will be used to determine the potential effects on sensitive receptors (within 250m of the Proposed Development) from disamenity dust and ambient dust (i.e., human health effects of PM_{10} exposure).

These assessments will consider potential dust generation from typical quarry activities (e.g., overburden removal, processing, onsite and offsite transportation etc.) and determine the likely effects on sensitive receptors with appropriate mitigation measures prescribed to offset effects, where necessary.

3.3.6 Climate

The potential impacts on climate will be assessed by determining the levels of greenhouse gases emitted by the Proposed Development during a typical year of operation.

Generally, greenhouse gases are grouped into three categories:

- Scope 1: Emissions directly associated with the operations of the development (plant equipment, facility owned vehicles, employee vehicles etc.)
- Scope 2: Indirect emissions associated with the operations of the development. This mainly relates to the use of electricity associated with the Site (lighting, wheel washes, buildings onsite etc)
- Scope 3: Indirect emissions not directly associated with the development. This will mainly relate to the movement of HGVs during the typical operations of the quarry.

Based on the information available, estimations on greenhouse gases will be calculated for both the Proposed Development and the existing Quarry. The assessment of greenhouse gases will follow IEMAs Guidance on *Assessing Greenhouse Gases and Evaluating their Significance.*

A Climate Change Vulnerability Assessment will also be completed following the methodology proposed by the European Commission's *Technical Guidance on the climate proofing of infrastructure in the period 2021-2027.* A desk-based review of available climate data, online resources (such as the Global Facility for Disaster Reduction and Recovery) and local area climate action plans to determine the potential vulnerability of the Proposed Development to climate hazards. The assessment will take cognizance of the carbon action plan review of Kildare County Council's Climate Change Adaptation Plan.

3.3.7 Noise and Vibration

Noise and vibration arising from all stages of the Proposed Development will be assessed.

The noise assessment will take cognisance of World Health Organisation research along with UK and Irish guidance specific to activities in the outdoors and quarrying works.

A baseline noise survey will be completed to characterise the daytime ambient acoustic characteristics. This will be completed in line with ISO 1996 Part 1:2016 '*Acoustics – Description, measurement and assessment of environmental noise Part 1: Basic quantities and assessment procedures.*'

The assessment will be based on the following BS4142:2014 and BS5228:2008 (+Annex A1:2014). Furthermore, an assessment of noise and vibration to the emission limit values set out within the document '*Environmental Management Guidelines: Environmental Management in the Extractive Industry*' (EPA 2006) will be carried out and presented.

Vibration will be assessed and the measures incorporated to manage any activities likely to result in notable vibration off-site. Where relevant, further mitigation will be identified. The acoustics assessment will extend beyond the Site boundaries to the closet noise sensitive receptors and will include site modelling of the future noise emission compared to existing ambient background levels and to standard industrial quarry limits.

3.3.8 Landscape and Visual

The EIAR will examine the potential effect to the physical landscape, landscape character and visual amenity because of the Proposed Development.

The Landscape and Visual Impact Assessment (LVIA) for the Site will involve a desktop study to identify relevant landscape and visual designations and sensitive visual receptors, followed by fieldwork to establish the landscape character of the receiving environment and select potential viewpoints. A 2km study area will be used.

The LVIA will consider criteria for assessing the potential effects on the landscape, including landscape character, value, sensitivity, magnitude of likely impacts, and significance of landscape effects. The sensitivity of the landscape receptor and the magnitude of the predicted landscape effect will determine the significance of the landscape effect.

The visual effect of the Site will also be assessed by considering the sensitivity of visual receptors and the magnitude of the visual effect. The magnitude of visual effects will be determined based on the relative visual dominance of the Site and its effect on visual amenity. The significance of visual effects will be determined as a function of visual receptor sensitivity and visual effect magnitude.

In addition to assessing the significance of landscape and visual effects, the LVIA will also consider the quality and timescale of the effects, categorizing them as temporary, short-term, medium-term, long-term, or permanent.

The assessment will be carried out in accordance with the Landscape Institutes '*Guidelines for Landscape and Visual Impact Assessment*' (3rd edition, GLVIA3), 2013 (UK) and '*Landscape and Landscape Assessment Consultation Draft Guidelines for Planning Authorities*', 2000 – Department of the Environment and Local Government.

3.3.9 Cultural Heritage

This Chapter of the EIAR will assess the effects on the archaeological, architectural, and cultural heritage of the Site, and the surrounding area of the Proposed Development. The study complies with the requirements of Directive EIA 2014/52/EU and the criteria and definitions for describing effects are drawn from the 2022 EPA Guidelines.

The study area to be examined utilises information from the:

- Record of Monuments and Places (RMP) of County Kildare;
- The Sites and Monuments Record;
- The Kildare County Development Plan 2023-2029;
- The National Inventory of Architectural Heritage;
- Aerial photographs;
- Excavation reports;
- Cartographic;
- Documentary sources;
- A field inspection.

Interactions with other environmental topics, including acoustics and visual effect will be assessed. Where relevant, further mitigation will be identified.

3.3.10 Material Assets

The EIAR will examine the potential effect of the Proposed Development during the operation phase regarding traffic, roads, and waste management.

Traffic & Roads

The travel route from the Site will be maintained as the current established route.

The effect on road traffic arising from the construction phase and the operation of the Proposed Development, on the surrounding road network, will be assessed considering the Institute of Highways and Transportation; Guidelines for Traffic Impact Assessment (TIA). Traffic counts will be undertaken as part of the Traffic Impact assessment to confirm existing traffic volumes using this road. Site specific traffic count data will be obtained from the surrounding road network that will be used to inform the TIA.

Cumulative effects of the future operations at the Site will be carefully integrated into the assessment.

Waste Management

The potential effects of the Proposed Development on solid waste management in the area during the construction and the operational phase will be examined. The assessment will be undertaken by means of a desk-based review of all relevant existing information, published EPA documents, and regional and national documents on solid waste management. The Proposed Development and its potential effects, both positive and negative, on the existing waste infrastructure both locally and nationally will be assessed in line with the IEMA guide to: Materials and Waste in Environmental Impact Assessment, 2020.

4 ALTERNATIVES, INDIRECT AND CUMULATIVE IMPACTS

The requirement to consider alternatives within an EIAR is set out in Annex IV (2) of the EIA Directive (2014/52/EU) which state, “A description of the reasonable alternatives studied by the person or persons who prepared the EIAR, which are relevant to the Proposed Development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the Proposed Development on the environment.”

This is expanded upon in Annex IV to the EIA Directive, which provides that the EIAR shall include “A description of the reasonable alternatives (for example in terms of project design, technology, location, size and 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.”

The Proposed Development alternatives will include various alternative options that were considered during the design stage.

Indirect effects are defined within the EPA EIA Guidance 2022 as “the effects on the environment, which are not a direct result of the project, often produced away from the project site or because of a complex pathway” [15]. The indirect effect of the Proposed Development will be considered for each aspect of the Proposed Development (where relevant).

Cumulative effects will similarly be considered for each aspect of the EIAR and is defined as “the addition of many minor or insignificant effects, including effects of other projects, to create larger, more significant effects” [15].

5 CONSULTATION

This document forms the consultation document for the project and has been issued to relevant prescribed bodies. Responses to the project, specifically in relation to the scope and extent of the proposed environmental assessment are requested to be sent to the MOR offices within 6 weeks from the date of the issue. Submissions from the prescribed bodies will be taken into consideration when preparing the EIAR.

Correspondence should be submitted to the following address:

Malone O'Regan Environmental

Ground Floor - Unit 3

Bracken Business Park

Bracken Road, Sandyford

Dublin 18, D18 32Y

Or alternatively to: admin@mores.ie

To ensure that the response finds the relevant persons, in all correspondence ensure to reference the project as:

- E2122 Proposed Extension to Ballyburn Quarry.

6 REFERENCES

[1] DHPLG, "Project Ireland 2040 National Planning Framework," Department of Housing,Planning and Local Government, 2018.

[2] Department of Public Expenditure and Reform, "National Development Plan 2021-2030," Government of Ireland, Dublin, 2021.

[3] EMRA, "Eastern and Midland Regional Spacial and Economic Stratagey 2019-2031," Eastern Midland Regional Assembley, 2019.

[4] Kildare County Council, "Draft Kildare County Development Plan 2023 - 2029," Kildare County Council, 2022, 2022.

[5] OPW, "The planning system and Flood Risk Managment," Stationary Office , Dublin, 2009.

[6] "Section 261 Planning and Development Act," Dublin , 2000.

[7] EPA, "Environmental Management in the Extractive Industry (Non-Scheduled Minerals)," Environmental Protection Agency, Wexford, 2006.

[8] DoEHLG, "Quarries and Ancillary Activities - Guidelines for Planning Authorities," Department of Environemnt Heritage and Local Government, 2004.

[9] ICF, "Environmental Code - Second Edition," Irish Concrete Federation, 2009.

[10] GSI, "Geological Heritage Guidelines for the Extractive Industry," Geological Survey of Ireland, 2008.

[11] DoEH&LG and ICF, "Code of Practice between the Department of the Environment, Heritage and Local Government and the Irish Concrete Federation," Department of the Environment, Heritage and Local Government and the Irish Concrete Federation, 2009.

[12] ICF, "Essential Aggregates Providing for Ireland's Needs to 2040," Irish Concrete Federation, 2019.

[13] European Commission, "Guidance on the Preparation of the Environmental Impact Assessment Reports," European Commission, Luxembourg, 2017.

[14] EPA, "Advice Notes on Current Practice in the Preparation of Environmental Impact Statements," Environmental Protection Agency, Dublin, 2003.

[15] EPA, "Guidelines on the Information to be Contained in Environmental Impact Assessment Reports," Environmental Protection Agency, Dublin, 2022.

[16] M. F. Ú. C. E. J. M. M. D. S. S. M. &. W. M. Wyse Jackson, "Ireland Red List No. 10: Vascular Plants.," National Parks and Wildlife Service, 2016.

APPENDIX 1-2

Consultee	Contact Details
Local Authorities	
Kildare County Council	plandept@kildarecoco.ie
Carlow County Council	planningdevman@carlowcoco.ie
Charities/NGOs/Professional Bodies	
An Taisce	info@antaisce.org
BirdWatch Ireland	info@birdwatchireland.ie
Friends of the Irish Environment	admin@friendsoftheirishenvironment.org
Fáilte Ireland	CustomerSupport@failteireland.ie
Irish Wildlife Trust	enquiries@iwt.ie
Utilities	
Electricity Supply Board (ESB)	esbnetworks@esb.ie
Irish Water	spatialplanning@water.ie
Gas Networks Ireland	dig@gasnetworks.ie networksinfo@gasnetworks.ie
Government Departments	
Department of Agriculture, Food and the Marine (DAFM)	environmentalco-ordination@agriculture.gov.ie
Department of Business, Enterprise and Innovation (DBEI)	info@dbei.gov.ie
Department of Communications, Climate Action and Environment (DCCAE)	customer.service@decc.gov.ie
Department of Culture, Heritage and the Gaeltacht (DCHG)	(see NPWS below)
Department of Rural and Community Development (DRCD)	info@drcd.gov.ie
Department of Transport, Tourism and Sport (DTTS)	info@dttas.gov.ie
Development Applications Unit – National Parks and Wildlife Service (NPWS)	natureconservation@npws.gov.ie
National Monuments Service	nationalmonuments@housing.gov.ie

National/State Agencies	
Environmental Protection Agency (EPA)	info@epa.ie
Geological Survey of Ireland (GSI)	garry.dunphy@gsi.ie
Health and Safety Authority	wcu@hsa.ie
Health Service Executive	environmental.health@hse.ie
The Heritage Council	mail@heritagecouncil.ie
Inland Fisheries Ireland (IFI)	info@fisheriesireland.ie
Office of Public Works (OPW)	info@opw.ie
Sustainable Energy Authority of Ireland (SEAI)	info@seai.ie
Teagasc	info@teagasc.ie
Transport Infrastructure Ireland (TII)	info@tii.ie

APPENDIX 1-3

Appendix A - Department of Housing, Local Government and Heritage

Appendix B - Inland Fisheries Ireland

Appendix C - Health and Safety Authority

Appendix D - Office of Public Works

Appendix E - Transport Infrastructure Ireland

APPENDIX A

From:	Housing Manager DAU
To:	Kevin Dowds
Cc:	Admin - (Mores); Housing natureconservation
Subject:	DAU Ref: G Pre00292/2023 FW: EIA Consultation for Proposed Extension to Ballyburn Quarry Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare
Date:	Wednesday 8 November 2023 13:13:18
Attachments:	231107 E2122 Scoping Report Document - Final Rev01.pdf

Our Ref: G Pre00292/2023 (Please quote in all related correspondence)

A Chara

I acknowledge receipt of your recent consultation which was forwarded by the Department's Nature Conservation team.

Please note that the Development Applications Unit (DAU) is the co-ordinating unit for the Department of Housing, Local Government and Heritage, co-ordinating responses/submission from National Parks and Wildlife Service, National Monuments Service, the Underwater Archaeology Unit and Architectural Heritage.

All Correspondence in relation to preplanning consultations is to be issued to Development Applications Unit. To avoid confusion please note that this type of referral should not be sent to other email addresses within the Department such as the nature conservation or Minister's email addresses.

In the event of observations, you will receive a co-ordinated heritage-related response by email from the Development Applications Unit (DAU).

The normal target turnaround for pre-planning and other general consultations is six weeks from date of receipt. In relation to general consultations from public bodies under the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 to 2011, the Department endeavours to meet deadline dates, where requested.

If you have not heard from DAU and wish to receive an update, please email manager.dau@npws.gov.ie.

Regards
Sinéad

—

Sinéad O' Brien
Executive Officer

—

Aonad na nIarratas ar Fhorbairt
Development Applications Unit
Oifigí an Rialtais
Government Offices

Bóthar an Bhaile Nua, Loch Garman, Contae Loch Garman Y35 AP90
Newtown Road, Wexford, County Wexford Y35 AP90
—

From: Housing natureconservation <natureconservation@npws.gov.ie>
Sent: Wednesday 8 November 2023 11:41
To: Housing Manager DAU <Manager.DAU@npws.gov.ie>
Subject: FW: EIA Consultation for Proposed Extension to Ballyburn Quarry Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare

Hello team,

Please see below for whenever you get a chance.

If it's not for you, just let me know.

Kind regards,
John.

From: Kevin Dowds <kdowds@mores.ie>
Sent: Wednesday 8 November 2023 11:25
To: Admin - (Mores) <admin@mores.ie>
Subject: EIA Consultation for Proposed Extension to Ballyburn Quarry Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare

To Whom It May Concern,

Please find attached an Environmental Impact Assessment (EIA) Scoping Report relation to the proposed extension to the existing Ballyburn Quarry located in Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare.

We would welcome any feedback that you may have on the scope of the EIA to be undertaken for the proposed development.

Correspondence should be submitted to the following address:
Malone O'Regan Environmental
Ground Floor - Unit 3
Bracken Business Park
Bracken Road, Sandyford
Dublin 18, D18 32Y

Or alternatively to; admin@mores.ie

Any comments in relation to the attached scoping document should be sent to the above correspondence before the close of business from six weeks of date of issue.

To ensure that the response finds the relevant persons, in all correspondence please ensure to reference the project as:

- E2122: Proposed Extension to Ballyburn Quarry

Kind Regards,

Kevin Dowds
BSc Hon., Env Sc,
Environmental Consultant

for and on behalf of
Malone O'Regan Environmental
Ground Floor – Unit 3
Bracken Business Park
Bracken Road, Sandyford
Dublin 18, D18 V32Y
Mob: +353 (0)87 7157428
✉: *kdowds@mores.ie*
Web*: www.mores.ie*

APPENDIX B

From: Donnachadh Byrne
To: Admin - (Mores)
Subject: E2122: Proposed Extension to Ballyburn Quarry : EIA FAO Kevin Dowds
Date: Monday 13 November 2023 11:21:59
Attachments: email_91898e46-788d-446d-94bd-9b9caffc07f1.png
mobile_afcaa717-9fb0-4041-901d-ddfbfed71969.png
phone_dfd5a08c-60c2-45d9-afb1-15ed1f65d842.png
web_b86a7355-05e3-4058-aa3c-786167892285.png
home_140df6c1-9891-415c-bffc-a78437368456.png
all_ifi_values_keepwell900x160_7c16c569-5c48-44f5-8875-b43f4a68ff81.png
email_852418dc-7261-46bd-8cad-0f5cfb922b46.png
phone_fb192a96-ab34-4721-a173-456574efe4b1.png
web_64d727b2-84ca-479d-bc60-45e02ad63d06.png
home_d6e0b8ad-bed2-44cf-a08c-5ceec6c9c9fe.png
external-signature_6737b7d5-5705-4554-b86d-f0ded9774efe.png
231107 E2122 Scoping Report Document - Final Rev01.pdf

Hello Kevin,

This was passed on to me for comment.
I've had a quick look at the attached documents and maps and note that the proposed works area/lands in ownership by Dan Morrissey are within the Lerr River catchment with the Lerr River a short distance from the site.
The Lerr is an important salmon spawning/nursery tributary of the Barrow SAC and much of the Lerr is SAC designated because of the importance of the salmon spawning recruitment on the Lerr.
Much of the site is in very close proximity to the Palatine Stream which is also a tributary of the Lerr and while not SAC designated the Palatine Stream should be considered an important salmonid watercourse and any salmon/lamprey populations on the Palatine Stream should be considered an important component of the Barrow SAC populations of these species.

IFI concerns relating to this proposed extension will include the potential for the discharge of deleterious matter to surface waters from operations on-site and potential impacts upon quantity/quality of ground/surface waters from operations here.

I hope to walk the section of the Palatine Stream near the site in the near future and if I have any further comment will let you know.

Would you mind confirming receipt of this mail.

Many thanks

Donnachadh Byrne

Donnachadh Byrne
Senior Fisheries Environmental Officer

Donnachadh.Byrne@fisheriesireland.ie • +353 (0)52 6180 055 • www.fisheriesireland.ie • E91 RD25

From: Susan Sayers <Susan.Sayers@fisheriesireland.ie>
Sent: Thursday, November 9, 2023 9:29 AM
To: Cormac Goulding <Cormac.Goulding@fisheriesireland.ie>; Donnachadh Byrne <Donnachadh.Byrne@fisheriesireland.ie>
Subject: Fw: EIA Consultation for Proposed Extension to Ballyburn Quarry Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare

Hi Cormac/Donnachadh,

Please see below and attached.

Thanks,
Susan

Susan Sayers
Adminstrative Assistant
Susan.Sayers@fisheriesireland.ie • 0871494030 • 052 6170072 • www.fisheriesireland.ie • E91 RD25

All_IFI_VALUES_KEEPWELL 900x160.png

From: info <info@fisheriesireland.ie>
Sent: 08 November 2023 12:13

To: Clonmel Info <Clonmel@fisheriesireland.ie>
Subject: FW: EIA Consultation for Proposed Extension to Ballyburn Quarry Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare

Afternoon all,

Please see below email received this morning.

Many thanks,
Kate

From: Kevin Dowds <kdowds@mores.ie>
Sent: Wednesday, November 8, 2023 10:45 AM
To: Admin - (Mores) <admin@mores.ie>
Subject: EIA Consultation for Proposed Extension to Ballyburn Quarry Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare

To Whom It May Concern,

Please find attached an Environmental Impact Assessment (EIA) Scoping Report relation to the proposed extension to the existing Ballyburn Quarry located in Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare.

We would welcome any feedback that you may have on the scope of the EIA to be undertaken for the proposed development.

Correspondence should be submitted to the following address:

Malone O'Regan Environmental

Ground Floor - Unit 3

Bracken Business Park

Bracken Road, Sandyford

Dublin 18, D18 32Y

Or alternatively to; admin@mores.ie

Any comments in relation to the attached scoping document should be sent to the above correspondence before the close of business from six weeks of date of issue.

To ensure that the response finds the relevant persons, in all correspondence please ensure to reference the project as:

- E2122: Proposed Extension to Ballyburn Quarry

Kind Regards,
Kevin Dowds
BSc Hon., Env Sc,
Environmental Consultant

for and on behalf of
Malone O'Regan Environmental
Ground Floor – Unit 3
Bracken Business Park
Bracken Road, Sandyford
Dublin 18, D18 V32Y
Mob: +353 (0)87 7157428
✉: *kdowds@mores.ie*
Web: *www.mores.ie*

APPENDIX C

From: Geoff Hynes
To: Admin - (Mores)
Subject: E2122: Proposed Extension to Ballyburn Quarry
Date: Wednesday 15 November 2023 14:51:08
Attachments: image001.png
EIA Consultation for Proposed Extension to Ballyburn Quarry HSA ref 4271.pdf

To whom it may concern,

Please see attached in relation to the above.

Regards,

Geoff

Geoff Hynes
Inspector | CCPS Unit | Health & Safety Authority
Mobile: 087-6002298
Email: geoff_hynes@hsa.ie
Web: www.hsa.ie

Health and Safety Authority,
Metropolitan Building,
James Joyce Street,
Dublin 1,
D01 KOY8

An tÚdarás Sláinte agus Sábháilteachta,
An Foirgneamh Uirbeach,
Sráid James Joyce,
Baile Átha Cliath 1
D01 KOY8

Ár bhFís: Saolta agus fiontair shláintiúla, shábháilte agus tháirgiúla
Our Vision: Healthy, safe and productive lives and enterprises

HSA Twitter
HSA Facebook
HSA YouTube

****

****

An tÚdarás Sláinte agus Sábháilteachta
Health and Safety Authority
0818 289 389 landuseplanning@hsa.ie www.hsa.ie

Malone O'Regan Environmental
Ground Floor - Unit 3
Bracken Business Park
Bracken Road, Sandyford
Dublin 18, D18 32Y

Our Ref: 4271

15/11/2023

Re: EIA Consultation for Proposed Extension to Ballyburn Quarry Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare

To whom it may concern,

I wish to acknowledge receipt of your correspondence dated 09/11/2023 regarding the above which has been noted.

If you have any queries please contact the undersigned.

Yours sincerely

G.Hynes

Geoff Hynes
Inspector,
COMAH, Chemical Production & Storage (CCPS)

APPENDIX D

From: Drainage Admin
To: Admin - (Mores)
Subject: FW: EIA Consultation for Proposed Extension to Ballyburn Quarry Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare
Date: Friday 10 November 2023 08:10:55

To Whom It May Concern,

Following on from email received below, OPW's Arterial Drainage Maintenance have no comments to make on this development.

Kind regards
Karen

From: Kevin Dowds <kdowds@mores.ie>
Sent: Wednesday 8 November 2023 10:45
To: Admin - (Mores) <admin@mores.ie>
Subject: EIA Consultation for Proposed Extension to Ballyburn Quarry Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare

To Whom It May Concern,

Please find attached an Environmental Impact Assessment (EIA) Scoping Report relation to the proposed extension to the existing Ballyburn Quarry located in Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare.

We would welcome any feedback that you may have on the scope of the EIA to be undertaken for the proposed development.

Correspondence should be submitted to the following address:

Malone O'Regan Environmental

Ground Floor - Unit 3

Bracken Business Park

Bracken Road, Sandyford

Dublin 18, D18 32Y

Or alternatively to; admin@mores.ie

Any comments in relation to the attached scoping document should be sent to the above correspondence before the close of business from six weeks of date of issue.

To ensure that the response finds the relevant persons, in all correspondence please ensure to reference the project as:

- E2122: Proposed Extension to Ballyburn Quarry

Kind Regards,

Kevin Dowds
BSc Hon., Env Sc,
Environmental Consultant

for and on behalf of
Malone O'Regan Environmental
Ground Floor – Unit 3
Bracken Business Park
Bracken Road, Sandyford
Dublin 18, D18 V32Y
Mob: +353 (0)87 7157428
✉: *kdowds@mores.ie*
Web*: www.mores.ie*

APPENDIX E

From:	INFO
To:	Admin - (Mores)
Subject:	TII Ref: TII23-125074 - EIAR Consultation for Proposed Extension to Ballyburn Quarry Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare Your Ref: E2122: Proposed Extension to Ballyburn Quarry
Date:	Friday 17 November 2023 12:34:11
Attachments:	231107 E2122 Scoping Report Document - Final Rev01.pdf

Dear Mr. Dowds,

Thank you for your correspondence of 8 November 2023 regarding the above. Transport Infrastructure Ireland's (TII's) position in relation to your enquiry is as follows.

TII will endeavour to consider and respond to planning applications referred to it, given its status and duties as a statutory consultee under the Planning Acts. The approach to be adopted by TII in making such submissions or comments, will seek to uphold official policy and guidelines, as outlined in the Section 28 Ministerial Guidelines 'Spatial Planning and National Roads Guidelines for Planning Authorities' (DoECLG, 2012). Regard should also be had to other relevant guidance available at www.TII.ie.

The issuing of this correspondence is provided as best practice guidance only and does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals, following the examination of any valid planning application referred.

TII notes the proposed site is in proximity to the M9, at a location on the network. Therefore, there may be road safety considerations that are required to be considered in any subsequent application.

With respect to EIAR scoping issues, the recommendations indicated below provide only general guidance for the preparation of an EIAR, which may affect the national road network.

The developer/scheme promoter should have regard, inter alia, to the following:

- Consultations should be had with the relevant Local Authority/National Roads Design Office with regard to the locations of existing and future national road schemes.
- TII would be specifically concerned as to potential significant impacts the development would have on the national road network (and junctions with national roads), in the proximity of the proposed development.
- The developer should assess the proposals with regard to the provisions of Chapter 3 of the DoECLG's 'Spatial Planning and National Roads Guidelines', in the assessment and determination of the subject planning application.
- The developer shall demonstrate that proposals will not negatively impact on the M9 national road, drainage regime.
- The developer should have regard to any Environmental Impact Statement and all

conditions and/or modifications imposed by An Bord Pleanála regarding road schemes in the area. The developer should, in particular, have regard to any potential cumulative impacts.

- The developer, in preparing EIAR, should have regard to TII Publications (formerly DMRB and the Manual of Contract Documents for Road Works).

- The developer, in preparing EIAR, should have regard to TII's Environmental Assessment and Construction Guidelines, including the 'Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes' (National Roads Authority (NRA), 2006).

- The EIAR/EIS should consider the 'Environmental Noise Regulations 2006' (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see 'Guidelines for the Treatment of Noise and Vibration in National Road Schemes' (1st Rev., NRA, 2004)).

- It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment (TTA) be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site, with reference to impacts on the national road network and junctions of lower category roads with national roads. In relation to national roads, TII's 'Traffic and Transport Assessment Guidelines' (2014) should be referred to in relation to proposed development, with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of TII's TTA Guidelines, which addresses requirements for sub-threshold TTA. Any improvements required to facilitate development should be identified. It will be the responsibility of the developer to pay for the costs of any improvements to national roads to facilitate the private development proposed, as TII will not be responsible for such costs.

- The designers are asked to consult TII Publications to determine whether a Road Safety Audit is required.

- In the interests of maintaining the safety and standard of the national road network, the EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network.

- TII recommends that that applicant/developer should clearly identify haul routes proposed and fully assess the network to be traversed. Where abnormal 'weight' loads are proposed, separate structure approvals/permits and other licences may be required in connection with the proposed haul route and all structures on the haul route through all the relevant County Council administrative areas should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal 'weight' load proposed.

Notwithstanding any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practise.

I hope that this information is of assistance to you.

Yours sincerely,

_____

Andrew Moore
Senior Regulatory & Administration Executive

From: Kevin Dowds <kdowds@mores.ie>
Sent: Wednesday, November 8, 2023 10:45 AM
To: Admin - (Mores) <admin@mores.ie>
Subject: EIA Consultation for Proposed Extension to Ballyburn Quarry Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare

To Whom It May Concern,

Please find attached an Environmental Impact Assessment (EIA) Scoping Report relation to the proposed extension to the existing Ballyburn Quarry located in Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare.

We would welcome any feedback that you may have on the scope of the EIA to be undertaken for the proposed development.

Correspondence should be submitted to the following address:

Malone O'Regan Environmental

Ground Floor - Unit 3

Bracken Business Park

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Dublin 18, D18 32Y

Or alternatively to; admin@mores.ie

Any comments in relation to the attached scoping document should be sent to the above correspondence before the close of business from six weeks of date of issue.

To ensure that the response finds the relevant persons, in all correspondence please ensure to reference the project as:

- E2122: Proposed Extension to Ballyburn Quarry

Kind Regards,
Kevin Dowds
BSc Hon., Env Sc,
Environmental Consultant

for and on behalf of
Malone O'Regan Environmental

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Appendix 3

APPENDIX 3-1

NATIONAL BY-PRODUCT CRITERIA

Reference Number: BP-N002/2024

of the 2nd of July 2024

establishing detailed criteria on the application of the conditions of Regulation 27(1)(a) – (d) when making the decision that greenfield soil and stone can be regarded as a by-product under Regulation 27 of the European Union (Waste Directive) Regulations 2011 – 2020.

Section 1

Subject matter

National By-Product Criteria Reference Number BP-N002/2024 establishes detailed criteria determining when greenfield soil and stone from undeveloped land, which is destined for lawful use at another development with appropriate planning permission or exemption, is a by-product and not a waste.

Note:

- These criteria only apply to greenfield soil and stone from undeveloped land, destined for use at another development with appropriate planning permission or exemption.
- It is the end user's responsibility to ultimately ensure the by-product material sourced from the producer and used at their development is required and fit for the intended use.
- Any production residue of a production process that is not in compliance with these criteria shall be classified as waste.
- The Environmental Protection Agency (herein referred to as the Agency) accepts no responsibility for by-product material that is registered against these criteria. Any person who gives either to an authorised person, a relevant local authority or the Agency, information which to that person's knowledge is false or misleading in a material respect, shall be guilty of an offence.

Section 2

Definitions

For the purposes of these National By-Product Criteria No. BP-N002/2024, the definitions set out in the European Union (Waste Directive) Regulations 2011 – 2020 shall apply.

In addition, the following definitions/interpretations shall apply:

(1) 'batch' means the total quantity of by-product generated from a specific production process which is destined for transfer to one specific end user. If the overall quantity of by-product being generated at the production process is destined for supply to two end users, then this production process will yield two batches of by-product with two separate Statement of Conformities which will be transferred to two separate end users.

(2) 'by-product' means a production residue that fulfils the conditions of Regulation 27(1)(a) to (d) of the European Union (Waste Directive) Regulations 2011-2020.

(3) 'competent authority' means an authority such as the Environmental Protection Agency, the local authorities, the Health and Safety Authority or any other National or governmental regulation body who may need to assess compliance with these criteria or any associated activity.

(4) 'contaminated soil and stone' means soil and stone that contains anthropogenic or man-made substances (such as, but not limited to, rubble, concrete, bricks, metal, bitumen, organic compounds such as (Benzene, Toluene, Ethyl-benzene, Xylene (BTEX), Mineral Oil, Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls) PCBs), Volatile Organic Compounds (VOCs) and pesticides that are not natural to the environment from which the material was extracted. Soil and stone that contains invasive alien plant species such as, but not limited to Japanese knotweed.

(5) 'development' has the meaning assigned in the Planning and Development Act 2000, as amended.

(6) 'exempted development' has the meaning assigned in the Planning and Development Act 2000, as amended.

(7) 'end user' means the intended user and final holder of the greenfield soil and stone.

(8) 'greenfield soil and stone' means soil and stone from land that has not been previously developed and is not contaminated soil and stone.

(9) 'holder' means the natural or legal person who is in possession of the by-product e.g., the producer at the production process, the haulier, or the end user at the use location/development.

(10) 'producer' means the holder who (i) has overall responsibility for the source development, the overall employer at the site who is responsible for the generation of the by-product material from the overall production process and (ii) transfers to another holder for the first time as a by-product material.

(11) 'production process' means a process which deliberately produces one or more primary products e.g., a residential construction development.

(12) 'production residue' means a material that is not deliberately produced in a production process but may or may not be a waste e.g., greenfield soil and stone generated from excavation as part of a development process.

(13) 'qualified person' means a suitably qualified, trained and experienced person who has the requisite knowledge and experience to complete the relevant requirements of the criteria as assigned. The producer and/or the end user has ultimate responsibility for the actions completed by their delegated qualified person and in ensuring the requirements of the National criteria are fulfilled on their behalf.

(14) 'source development' means the source of the greenfield stone and stone, where the production process occurs (e.g., ground enabling works for a construction project).

(15) 'statement of conformity' means a statement/ declaration that the greenfield soil and stone conforms to the National By-Product Criteria including details on the intended use of the by-product and is made available for inspection upon request by the relevant authorities.

(16) 'use development' means the final location/destination for the use for the greenfield soil and stone.

Section 3

Criteria for greenfield soil and stone.

Greenfield soil and stone shall be regarded as a by-product and not a waste where, upon transfer by the producer from the source development, all of the following conditions are demonstrated as fulfilled:

(1) The production process which generates the greenfield soil and stone by-product complies with the criteria set out in Part 1 of Annex I;

(2) The transfer of greenfield soil and stone by-product from the production process complies with the criteria set out in Part 2 of Annex I;

(3) The quality of the greenfield soil and stone by-product from the production process complies with the criteria set out in Part 3 of Annex I;

(4) The acceptance of greenfield soil and stone by-product at the use development complies with the criteria set out in Part 4 of Annex I;

(5) The further use of the greenfield soil and stone by-product complies with the criteria set out in Part 5 of Annex I;

(6) The submission of information is in a form and format as may be prescribed by the Agency through relevant explanatory note(s), guidance, a register, or by other means in order to establish that the criteria in the above paragraphs are met;

(7) The producer and end user shall maintain documentary evidence, for assessment by the relevant competent authority which demonstrates compliance, where appropriate, with the provisions of the National criteria, Construction Products Regulations, relevant standards and any other legislation or technical guidance relevant to greenfield soil and stone by-product, as required;

(8) The producer has satisfied requirements set out in Sections 4 to 6 and

(9) The producer, holder and end user shall comply with the requirements set out in Section 8 (Compliance).

Section 4

Statement of conformity

1. The producer shall issue, for each batch of greenfield soil and stone by-product, a statement of conformity to the format set out in Annex III (including an attached End User's Declaration as described in Section 5 below).
2. The producer shall transmit a copy of the original signed statement of conformity to the next holder(s) of the greenfield soil and stone by-product load, and to the end user. The producer shall retain the original signed statement of conformity for at least 5 years, or as otherwise directed by relevant Regulation, after its date of issue and shall make it available to competent authorities and a relevant end user upon request.
3. The end user shall retain the copy of the original signed statement of conformity for at least 5 years, or as otherwise directed by relevant Regulation, after its date of issue and shall make it available to competent authorities and a relevant end user upon request.
4. The statement of conformity may be in electronic form.

Section 5

End User's Declaration

1. The end user shall complete and sign the end user's declaration described in point 2 as evidence that they consider the soil and stone suitable for further use at the use development.
2. The end user shall issue an end user's declaration specific to the source development and the use development which conforms to the format set out in Annex II.
3. The end user shall transmit a copy of the original signed end user's declaration to the producer of the greenfield soil and stone by-product. The end user shall retain the original end user's declaration for at least 5 years, or as otherwise directed by relevant Regulation, after its date of signing and shall make it available to competent authorities or a relevant producer(s) upon request.
4. The producer shall attach a copy of the completed and signed end user's declaration received from the end user to the original statement of conformity (Reference Section 5).
5. The end user's declaration may be in electronic form.

Section 6

Record Keeping

1. The producer and end user shall both establish, maintain, and implement an appropriate record keeping system that is fit for purpose and suitable to demonstrate compliance with the criteria referred to in Section 3.
2. The producer and end user shall make the record keeping system and documents associated with the system available for inspection.
3. The producer's record keeping system shall include:
   (a) assessment of the production process and its suitability as a source of greenfield soil and stone by-product as set out in Part 1 (a) to (b) of Annex I;
   (b) assessment that the greenfield soil and stone has not been processed, other than normal industry practice as set out in Part 1(c) of Annex I, Part 5 (a);
   (c) control, traceability, quantification and unique identification of each load of by-product transferred to another holder for final use at the use development, as set out in Part 2 of Annex 1;
   (d) monitoring of the quality of greenfield soil and stone resulting from the production process as set out in Part 3 (a) to (c) of Annex I;
   (e) completion and sign-off of a statement of conformity, inclusive of the appropriate end user's declaration as set out in Part 3 (d) to (e) of Annex I;
   (f) carrying out registration requirements.

4. The end user's record keeping system shall demonstrate each of the following aspects:
   (a) completion, sign-off, distribution and recording of an end user's declaration as set out in Part 2(a,b) and Part 4 of Annex I;
   (b) acceptance, control, traceability and quantification of each load of by-product transferred by the producer to the use development, as set out in Part 4 of Annex I;
   (c) monitoring of the quality of greenfield soil and stone by-product transferred by the producer to the use development as set out in Parts 1 and 3 of Annex I;
   (d) assessment that the greenfield soil and stone has not been processed, other than normal industry practice as set out in Part 5 of Annex I;
   (e) quarantine, segregation, and control of non-compliant by-product.

Section 7

Registration

1. Prior to transfer from a production process, a producer of greenfield soil and stone in accordance with these criteria shall register the material on the Agency's public register, or as otherwise prescribed by the Agency. An individual registration shall be made for each batch of greenfield soil and stone produced from a specific production process which is destined for transfer to a specific use development.
2. Following the registration of the batch of by-product, the producer shall not transfer the soil and stone by-product from the site of origin for a period of no less than five working days from the date of registration.
3. The producer shall submit registration information in a form and format as may be prescribed by the Agency.

Section 8

Compliance

1. The producer, holder or end user shall comply with any request made by a competent authority and/or authorised person in relation to the provision of evidence of compliance with these criteria or any requirements associated with these criteria e.g., product, or health and safety requirements.
2. Any person who gives either to an authorised person, a relevant local authority or the Agency, information which to that person's knowledge is false or misleading in a material respect, shall be guilty of an offence.

Section 9

Entry into effect

National By-Product Criteria Reference Number BP-N002/2024 shall be available for use immediately following publication on the Agency's website.

ANNEX I

Criteria for the greenfield soil and stone by-product

Criteria		Self-monitoring requirements
Part 1. The production process		
1(a)	The by-product material generated from the production process shall be greenfield only.	The producer, or designated qualified person, shall assess the production process and ensure criterion Annex I, Part 1(a) is satisfied
1(b)	The production process shall be a process at the source development where the primary aim is not the production of greenfield soil and stone which is a by-product of the process.	The producer, or designated qualified person, shall assess the production process and ensure criterion Annex I, Part 1(b) is satisfied.
1(c)	The greenfield soil and stone shall be a by-product from the production process.	The producer, or designated qualified person, shall assess the production process and ensure criterion Annex I, Part 1(c) is satisfied.
1(d)	The greenfield soil and stone shall be suitable for direct use at a use development and not require further processing other than normal industrial practice.	The producer, or designated qualified person, shall assess the greenfield soil and stone and processing requirements and ensure criterion Annex I, Part 1(c) is satisfied.
Part 2. Controlled transfer of the greenfield soil and stone by-product.		
2(a)	The end user shall only sign an End User's Declaration if their use development can demonstrate the fulfilment of the requirements of the End User's Declaration Form set out in Annex II.	The end user, or designated qualified person, shall complete and sign an End User's Declaration as described in criteria Annex I, Part 2(a) and (b).
2(b)	Greenfield soil and stone by-product shall only be transferred to the use development where: i. the producer has received a copy of a completed and signed End User's Declaration from the end user; and ii. the producer has registered the batch of by-product, to be transferred from the source development to the use development, on the Agency's register.	The producer or designated qualified person, shall only register and transfer by-product to the end user when these criteria and the criteria set out in Sections 4 and 7 have been satisfied.
2 (c)	Following the registration of the batch of by-product, the producer shall not transfer the soil and stone by-product from the site of origin for a period of no less than five working days from the date of registration.	The producer, or designated qualified person, shall only transfer by-product to the end user when these criteria and the criteria set out in Sections 3 and 5 have been satisfied.
Part 3. Quality of greenfield soil and stone by-product from the production process.		

Criteria		Self-monitoring requirements
3(a)	The batch of greenfield soil and stone by-product shall be free of: i. Invasive alien plant species; ii. Anthropogenic material or substances including but not limited to: a. Man-made substances or objects such as concrete, bricks, metal, plastic, bituminous materials, b. organic compounds such as BTEX, mineral oil, Total Petroleum Hydrocarbons (TPHs), PAHs, PCBs; c. VOCs; d. Pesticides; iii. Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS); iv. Made ground; and v. any other substance or material as may be prescribed by the Agency.	The producer, or designated qualified person, shall assess the greenfield soil and stone and ensure this criterion is satisfied.
3(b)	Where a batch of greenfield soil and stone includes topsoil, this portion of the batch shall be segregated and managed separately and shall only be used in a final surface layer.	The producer or designated qualified person shall ensure the topsoil portion of the batch is appropriately labelled and segregated. The end user, or designated qualified person, shall complete the inspections required to ensure criterion 3(a) has been satisfied.
3(c)	The batch of greenfield soil and stone by-product from the production process shall meet the end users' requirements as stated in the End Users Declaration in Annex I, Part 2(a) above.	The producer, or designated qualified person, shall complete the assessments required to ensure criterion 3(b) has been satisfied.
3(d)	**The Statement of Conformity** in Annex III shall be fully completed for each batch of by-product and signed as approved by the producer prior to the transfer of any by-product from the production process.	The producer, or designated qualified person, shall complete the assessments required to ensure criterion 3(c) has been satisfied.
3(e)	The producer shall transmit a copy of the original signed statement of conformity as described in Section 3(2) to the next holder of the greenfield soil and stone by-product. This could be: (i) a haulier; and/or (ii) the end user. The producer responsible for the transfer of the by-product to the use development shall ensure a copy of the original signed statement of conformity has been transmitted with the by-product to the end user.	The producer, or designated qualified person, or holder shall complete the assessments required to ensure criterion 3(d) has been satisfied.

Criteria		Self-monitoring requirements
Part 4. Controlled acceptance at the use development.		
4(a)	The end user shall only accept greenfield soil and stone into their development from a producer that has registered the by-product on the Agency's register.	The end user, or designated qualified person, shall complete the inspections required to ensure criterion 4(a) has been satisfied.
4(b)	Greenfield soil and stone by-product shall only be accepted into the use development where a copy of a completed and signed Statement of Conformity has been transmitted to the end user and meets the procedural requirements for the inspection and acceptance of incoming by-product.	The end user, or designated qualified person, shall complete the inspections required to ensure criterion 4(b) has been satisfied.
4(c)	Greenfield soil and stone by-product that fail the end user's inspection described in Annex I, Part 4(a) and (b) above shall be denied entry to the use development.	The end user, or designated qualified person, shall complete the inspections required to ensure criterion 4(c) has been satisfied.
4(d)	Only greenfield soil and stone by-product which meets the requirements of Annex I, Part 4(a) and (b) shall be unloaded from a vehicle at the use development.	The end user, or designated qualified person, shall complete the inspections required to ensure criterion 4(d) has been satisfied.
4(e)	Unloaded by-product shall be inspected in accordance with a procedure for the inspection and acceptance of incoming by-product.	The end user, or designated qualified person, shall complete the inspections required to ensure criterion 4(e) has been satisfied.
4(f)	Any unloaded by-product that fails the inspection carried out in accordance with Annex I, Part 4(e) shall be quarantined and treated as a waste.	The end user is responsible for ensuring by-product which does not satisfy requirements of Annex I, Part 4(e) is handled a waste and is collected by an authorised waste collector.
Part 5. Further use of the greenfield soil and stone by-product at the Development.		
5(a)	Normal industry practice only shall be used by the end user when processing greenfield soil and stone by-product.	The producer and end user, or designated qualified person, shall ensure the requirements of criterion 5(b) have been satisfied.
5 (b)	The end user who has the intention of using the quantity of material accepted at a development, has been granted planning permission or has been issued a Section 5 Declaration of Exemption by the Planning Authority in accordance with the Planning and Development Act 2000, as amended. The end user shall only use the by-product material where this use is lawful, in that it meets the needs of the development to the satisfaction of the Planning Authority.	The producer and end user, or designated qualified person, shall ensure the requirements of criterion 5(b) have been satisfied.

ANNEX II

End User's Declaration referred to in Section 5.

Sample **End User's Declaration**

To whom it may concern,

I declare that I am the *end user* and I require [quantity] _____ tonnes of *greenfield* soil and stone from the *producer* _____. The by-product is to be produced at [source development address] _____. I am satisfied that the *source location* from which the soil and stone is to be excavated *is* a greenfield site. I *will use* the quantity of soil and stone referenced above for [describe what the by-product material will be used for] _____ at [use development address] _____.

I am satisfied that:

□ The use of this quantity of by-product soil and stone as described above *is provided for* in the planning permission *granted* for the development at the above use location.

Planning Permission Register Reference Number: _____

Planning Permission Expiry Date: _____

Description of how the planning permission provides for the use of this by-product:

_____

I have attached:

□ Evidence of granted planning permission and a drawing which indicates the *site boundary* of the development *and* the area within the development boundary where the by-product is to be used.

OR

□ The use of this quantity of by-product soil and stone was specifically set out in an application for a Section 5 Declaration of Exemption to the Planning Authority and a Section 5 Declaration of Exemption was issued by the Planning Authority.

Section 5 Declaration of Exemption Register Reference Number: _____

Declaration expiry date, where applicable: _____

I have attached:

□ A copy of the application for Section 5 Declaration of Exemption submitted to the Planning Authority inclusive:

- of the map of the use location which indicates its site boundary and the area within the development boundary where the by-product is to be used; and
- the description of the use of the quantity of by-product as described above;

□ A copy of the Section 5 Declaration of Exemption issued by the Planning Authority; and

I declare that I shall retain the copy of the original signed statement of conformity for at least 5 years, or as otherwise directed by relevant Regulation, after its date of issue and shall make it available to competent authorities and a relevant end user upon request, in accordance with Section 4 Part 6 of the National Criteria.

By signing this declaration, I consider this material to be suitable for certain further use at the use development listed above.

I give consent to the EPA to copy this declaration for its own use and make it available for inspection by the relevant authority.

Signed: _____

Print Name: _____

Company Name: _____

Company Address: _____

Date: _____

ANNEX III

Statement of Conformity with the by-product criteria referred to in Section 5

1	*Producer of the greenfield soil and stone:* Producer name: Address: Contact Person: Tel: E-mail:	2	Unique load identification/reference no.:

3	*Source Development:* (a) Address of the greenfield site being excavated: _____ (b) Grid co-ordinates that relate to the greenfield site being excavated: Grid co-ordinates: N_____ E_____ (c) A map of the production process, which indicates the *site boundary* and outlines the area of the site from within which the greenfield soil and stone will be excavated, has been attached to this Statement: Tick to confirm map attachment ☐
4	*Production process:* (a) Description of the production process: _____ (b) The excavation of greenfield soil and stone is an integral part of the production process. Tick to confirm the above statement ☐ (c) The greenfield soil and stone is a production residue from the above production process and *not* the primary aim(s) of the production process. Tick to confirm the above statement ☐ (d) The quantity of the greenfield soil and stone load in tonnes: _____. <u>Note:</u> - This quantity relates to the maximum quantity of greenfield soil and stone that is estimated to be generated as a by-product of the overall development. - This quantity shall match the quantity recorded on the register. - Should it be the case that the production process yields in excess of this figure, another Statement of Conformity shall be completed along with another entry on the register. Tick to confirm the above statement ☐ (e) The greenfield soil and stone has not undergone any processing other than normal industrial practice Tick to confirm the above statement ☐
5	*Quality of Greenfield Soil and Stone:* (a) The substance or object being declared as by-product is *greenfield* soil and stone. Tick to confirm the above statement ☐ (b) A site evaluation has been completed. No evidence of the site being contaminated or previously developed has been found. No anthropogenic materials/objects/substances or made ground have been found. No invasive alien species or vectors have been detected. I am satisfied there is no evidence to suggest the site is anything other than greenfield. Tick to confirm the above statement ☐ (c) Historical aerial maps of the site have been reviewed and there is no evidence that the area of excavation has ever been partially/wholly developed. Tick to confirm the above statement ☐ (d) The greenfield soil and stone is classified as engineering class (where applicable): _____

	(e) I declare that the greenfield soil and stone is suitable, from an environmental and civil perspective, for direct use at the end destination without any further processing. Tick to confirm the above statement ☐
6	*Use development:* (a) Description of the overall development taking place at the use development: _____ (b) Description of *the specific use* for the greenfield soil and stone as part of this development: _____ (c) Address of the use development location: _____ (d) End user contact details: End User's name: Address: Contact person: Tel. E-mail: (e) Grid co-ordinates that relate to the development: Grid co-ordinates: N_____ E_____ (f) A map of the development, which indicates the site boundary and outlines the area of the site within which the greenfield soil and stone will be used, has been attached to this Statement: Tick to confirm map attachment ☐ (g) The End User's Declaration has been completed and signed *by the end user* responsible for the development of the use location. The End User's Declaration has been attached to this Statement of Conformity. Tick to confirm the above statement ☐ (h) If instructed by an end user or enforcement officer, I shall cease transfer of by-product to the development immediately. Tick to confirm the above statement ☐ (i) I shall not supply a quantity of by-product greater than that recorded on the End User's Declaration or this Statement of Conformity to the end user's use development. Tick to confirm the above statement (j) I shall not supply a quantity of by-product greater than that recorded on the End User's Declaration or this Statement of Conformity to the end user's use development. Tick to confirm the above statement ☐ (k) I declare that I shall make all relevant documents and records related to this by-product registration, including, but not limited to Statements of Conformity, end user declaration(s), maps, and logs of material dispatched from the production process as by-product, available for inspection by the relevant competent authority(s) upon request. Tick to confirm the above statement ☐ (l) I understand that failure to provide a complete statement of conformity, inclusive of end user declaration and source and use development maps (in the case of soil and stone) may result in enforcement action by the relevant authority. Tick to confirm the above statement ☐
6	The greenfield soil and stone in this batch meets the requirements referred to in paragraphs 1 to 9 of Section 3 of National By-Product Criteria No. 002/2024. Tick to confirm the above statement ☐
7	Producer Declaration: I certify that the above information is complete and correct to the best of my knowledge: Name: Organisation: Date: OBJ Signature: Company Seal:

APPENDIX 6

Appendix 6-1

November 2024

Plazamont Ltd. T/A Dan Morrissey & Co.

Bat Report

Continuance of Use & Extension to Ballyburn Pit

On behalf of

Dan Morrissey & Co. (Plazamont Ltd)

Ballyburn Upper, Gorteenvacan, Knockbane, Castledermot, Co. Kildare

MALONE O'REGAN ENVIRONMENTAL

Form ES - 04

MALONE O'REGAN ENVIRONMENTAL

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Email: enviro@mores.ie

Title: Bat Report, Continuance of Use & Extension to Ballyburn Pit, Dan Morrissey & Co. (Plazamont Ltd), Ballyburn Upper, Gorteenvacan, Knockbane, Castledermot, Co. Kildare

Job Number: E2122

Prepared By: Stephanie Lonergan **Signed:** S. Lonergan

Checked By: Gus Egan / Dyfrig Hubble **Signed:**

Approved By: Dyfrig Hubble **Signed:**

Revision Record

Issue No.	Date	Description	Remark	Prepared	Checked	Approved
01	13/11/24	Report	Final	SL	GE/DH	DH

Bat Report

Continuance of Use & Extension to Ballyburn Pit

Dan Morrissey & Co. (Plazamont Ltd)

Ballyburn Upper, Gorteenvacan, Knockbane, Castledermot, Co. Kildare

Contents

FIGURES

TABLES

1 INTRODUCTION

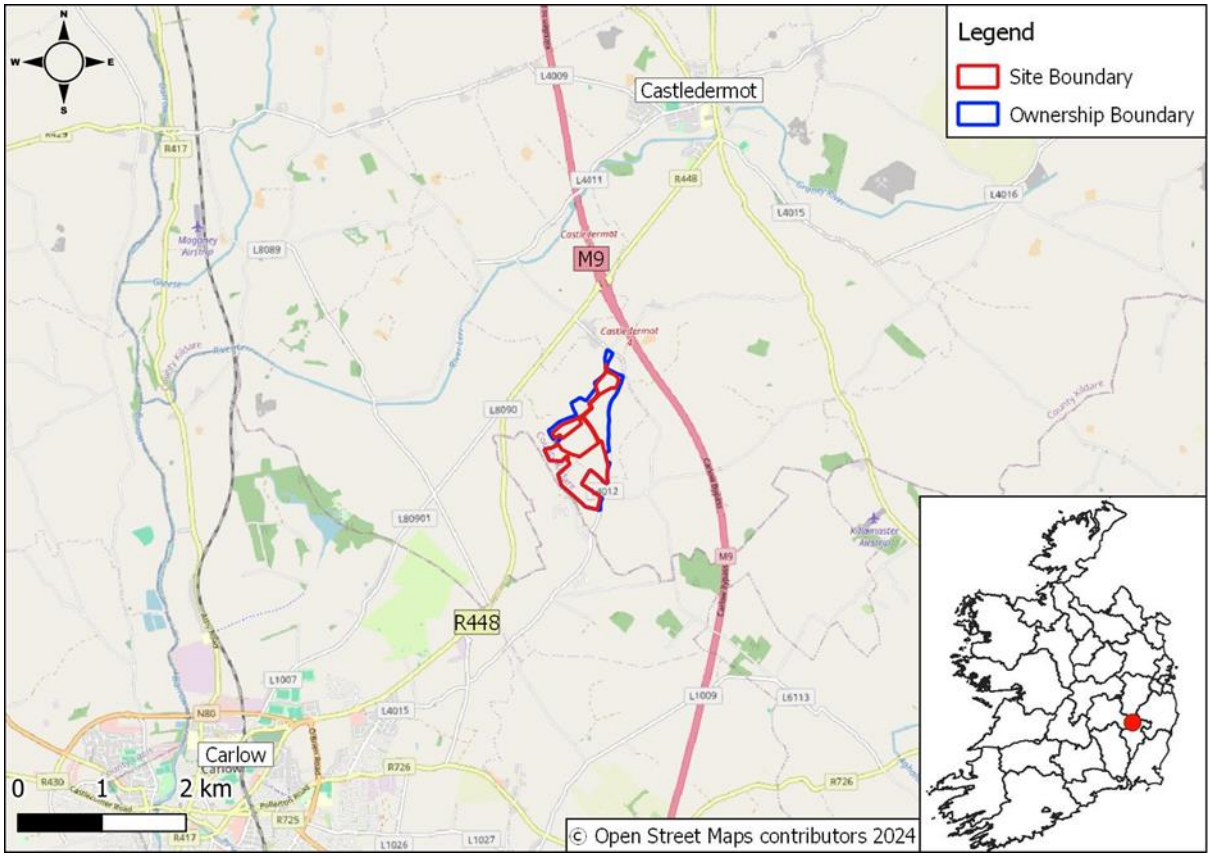
This Bat Survey Report has been prepared by Malone O'Regan Environmental ('MOR Environmental') on behalf of Plazamont Ltd (trading as 'Dan Morrissey & Co.') ('the Applicant') to present the findings of bat surveys undertaken at the site within the townlands of Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co. Kildare (Ordnance Survey Ireland Grid Reference ITM 676667 681155) (the Site).

The Site consists of agricultural grassland and is adjacent to the existing operational Ballyburn Pit. This Bat Report is an Appendix to Chapter 6 – Biodiversity of the Environmental Impact Assessment Report ('EIAR') submitted to Kildare County Council in support of the overall planning application for the Proposed Development. This Report should be read in conjunction with the EIAR.

A baseline ecological survey of the Site was undertaken on the 28th June 2023. The baseline ecological survey highlighted the potential for bats to use trees on-site for roosting, and the hedgerows and treelines on-site for foraging and commuting purposes. It was therefore deemed necessary for further survey work to be carried out to determine whether or not bats would be negatively impacted by the works associated with the proposed quarry extension (the 'Proposed Development'). Full details of the description of the Proposed Development can be found in Chapter 3 of the EIAR (Volume 2 – Main Text).

The location of the Site shown in Figure 1-1.

Figure 1-1: Site Location



1.1 Relevant Legislation

All Irish bat species are protected by law under the Wildlife Act 1976 and its subsequent amendments. They are afforded full protection under this act, which makes it a criminal offence for anyone without a licence to:

- Kill, injure or handle a bat;
- Possess a bat (whether alive or dead);
- Disturb a roosting bat; and,
- Damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not.

In addition to domestic legislation, bats are also protected under the EU Habitats Directive (92/43/EEC). All Irish bats are listed in Annex IV of the Habitats Directive, and the lesser horseshoe bat is further listed under Annex II, which makes it an offence to:

- Deliberately capture, injure or kill any bat; or,
- Deliberately disturb a bat, in particular, any disturbance which is likely;
    (a) To impair their ability:
        (i) To survive, to breed or reproduce, or to rear or nurture their young; or,
        (ii) To hibernate or migrate.
    (b) To affect significantly the local distribution or abundance of the bat species; or,
- Damage or destroy a breeding site or resting place of a bat.

Therefore, the destruction, alteration or evacuation of a known bat roost is a notifiable action under current legislation and a derogation license must be obtained from the National Parks and Wildlife Service ('NPWS') before works can commence.

Furthermore, it should also be noted that any works interfering with bats and especially their roosts, including for instance, the installation of lighting in the vicinity of the latter, may only be carried out under a license to derogate from Regulation 23 of the Habitats Regulations 1997, (which transposed the EU Habitats Directive into Irish law) issued by NPWS.

1.2 Statement of Authority

The bat inspection survey and subsequent report were undertaken and prepared by the following MOR Environmental personnel: Ms. Stephanie Lonergan and Mr. Dyfrig Hubble.

Stephanie Lonergan, Environmental Consultant, has a B.A. (Mod) (Hons) in Environmental Science. Stephanie is a qualifying member of the Chartered Institute of Ecology and Environmental Management ('CIEEM') with a particular interest in bat ecology and conservation. Stephanie has completed courses on bat ecology, identification, handling, biometrics and mitigation with CIEEM and Bat Conservation Ireland. Stephanie has undertaken training run by Wildlife Acoustics for analysis of bat calls in Kaleidoscope Pro Software and regularly uses this programme within her role at MOR Environmental. Stephanie has experience undertaking bat surveys and tree / building assessments and regularly attends events held by local bat groups.

This report was reviewed and approved by Mr. Dyfrig Hubble, Associate Director – Ecologist. Dyfrig has a B.Sc. (Hons) in Tropical Environmental Science and an M.Sc. in Environmental Forestry. Dyfrig is a full member of the Chartered Institute of Ecology and Environmental Management. Dyfrig has over 18 years of experience working in the ecological consultancy sector, including habitat appraisals and specialist species-specific surveys. Dyfrig has extensive experience in undertaking a variety of bat surveys, including dawn / dusk surveys, transects, static monitoring, harp trapping and Lesser Horseshoe roost counts. Dyfrig has also worked on numerous projects that have required supervision of building demolition and tree removal works under licence. These projects have included work both in the UK and Ireland.

1.3 Species Background

There are 11 recorded bat species in Ireland, nine of which are considered resident and two which are considered vagrants (Please see Table 1-1 below).

Table 1-1: Status of Irish Bat Species

Bat Species	Irish status	European Status
Resident Bat Species		
Soprano Pipistrelle *(Pipistrellus pygmaeus)*	Least Concern	Least Concern
Brown Long-eared Bat (*Plecotus auritus)*	Least Concern	Least Concern
Common Pipistrelle (*Pipistrellus pipistrellus)*	Least Concern	Least Concern
Lesser Horseshoe Bat (*Rhinolophus hipposideros)*	Least Concern	Near Threatened
Whiskered Bat *(Myotis mystacinus)*	Least Concern	Least Concern
Daubenton's Bat *(Myotis daubentonii)*	Least Concern	Least Concern
Leisler's Bat *(Nyctalus leisleri)*	Least Concern	Least Concern
Nathusius' Pipistrelle *(Pipistrellus nathusii)*	Least Concern	Least Concern
Natterer's Bat *(Myotis nattereri)*	Least Concern	Least Concern
Vagrants		
Brandt's bat (*Myotis brandtii*)	Data Deficient	Least Concern
Greater Horseshoe Bat (*Rhinolophus ferrumequinum)*	Data Deficient	Near Threatened

1.3.1 Types of Bat Roosts

Bats were originally cave and tree-dwelling animals, but many now use buildings to roost within. Buildings are highly important as roosting sites for all Irish bat species as they use buildings for all roost types. Most significant in terms of roosts in buildings are maternity roosts, but cellars and attics can serve as hibernation sites for bats. Roosts within buildings can far exceed the numbers encountered in trees, bridges, caves or cliffs and roosts of over 1,000 bats have been recorded in buildings [1].

Bats are social animals, and most species congregate in large colonies during the later spring / summer. These colonies consist mostly of females, with some juvenile males from the previous year. Male bats normally roost individually or in small groups meeting up with the females in the late autumn, when it is time to mate. In summer, bats seek warm dry buildings in which they can give birth and suckle their young. In winter, they seek out places with a constant low temperature and high humidity where they can become torpid and hibernate during adverse weather conditions. However, bats do not hibernate continuously during winter and will awake and hunt during mild nights when there are insects available, and it is energetically advantageous to forage [2].

One purpose of daytime tree or building inspections is to determine the potential of bat roosts within the survey area. Due to the transient nature of bats and their seasonal life cycle, there are a number of different types of bat roosts. Where possible, one of the objectives of the surveys is to be able to identify the types of roosts present, if any.

Bats in Ireland feed exclusively on insects, and in the summer months (May – September), they generally emerge from their roosts around sunset to feed. Bats are known to use a number of different foraging sites in the same night and move between them to locate areas of high insect concentrations. They are also known to exhibit site loyalty and will return to the same foraging sites night after night [3].

Table 1-2 below defines the various types of bat roosts.

Table 1-2: Bat roost types (definitions written by the NE Earned Recognition Project). [2]

Roost Type	NE Definition
Day Roost	A place where individual bats or small groups, rest or shelter in the day during the summer.
Night Roost	A place where bats rest or shelter in the night but are not found in the day. May be used by a single individual on occasion, or it could be used regularly by the whole colony.
Feeding Roost	A place where individual bats, or few individuals, rest or feed for short periods during the night but are not present by day.
Transitional Roost	A place used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.
Maternity Site	A place where female bats give birth and raise their young to independence. In some species males may also be present in the maternity roost.
Hibernation Site	A place where bats may be found individually or together during winter. They have a constant cool temperature and high humidity.
Satellite Roost	An alternative roost found in close proximity to the main nursery colony used by a few individuals to small groups of breeding females throughout the breeding season.

1.4 Purpose of Survey Work

The implication of these legislative policies is that the Proposed Development needs to take account of the potential effects on bats. Survey work is necessary to establish whether the species are currently present in areas where suitable habitat exists and in areas where bats have previously been recorded. Survey work also enables appropriate mitigation measures to be incorporated into the design of the project and ensures that there are no adverse effects on the conservation status of the species.

Survey work was deemed necessary based on desktop surveys and suitable habitat for roosting, foraging and commuting bats being identified during the initial walkover of the Site.

2 METHODOLOGY

The methodologies used to establish the presence / potential presence of bats are summarised below.

2.1 Desk-Based Studies

A desk-based study was undertaken to identify records of bats within the Site. The following sources of information were reviewed:

- The National Parks and Wildlife Service ('NPWS') website was consulted to obtain the most up-to-date detail on conservation objectives for the European sites relevant to this assessment [4];
- Aerial mapping was reviewed to identify any habitats and features likely to be used by bats. Maps and images of the Study Area and general landscape were examined for suitable foraging or commuting habitats, including woodlands and forestry, hedgerows, treelines, and watercourses;
- The National Biodiversity Data Centre ('NBDC') website was consulted with regard to bat species distributions and bat habitat suitability index [5].

2.2 Field Based Studies

The survey design was informed by previous experience and the following publications:

- *Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes* [1];
- *A Conservation Plan for Irish Vesper Bats* Irish Wildlife Manual No. 20 [6];
- *UK Bat Mitigation Guidelines: A guide to impact assessment, mitigation and compensation for developments affecting bats* [7]*;*
- *Bat Mitigation Guidelines for Ireland V2*. Irish Wildlife Manuals, No. 134 [3] a publication by the NPWS; and,
- *Bat Surveys for Professional Ecologists - Good Practice Guidelines* (3rd ed.). London: The Bat Conservation Trust [8].

2.2.1 Walkover and Identification of Bat Habitats

The Site was assessed during the daytime walkover survey on the 28th June 2023 in relation to potential bat roosting, foraging habitats and potential commuting routes. Bat habitats and commuting routes identified were considered in relation to the wider landscape to determine connectivity for local bat populations and through the examination of aerial mapping.

2.2.2 Ground Level Tree Assessment

As part of the walkover, all trees within the Site and adjoining lands were assessed for the presence of features that could be utilised by roosting bats, using close-focusing binoculars and a powerful focused-beam light source. The following criteria were used:

- Presence of natural cavities, splits, cracks, loose bark and rot holes in the trunk or boughs of the tree;
- Presence of dense and woody ivy (*Hedera helix*) growth that could be used by bats for roosting;
- Evidence of bat droppings, which may also be seen as a black streak beneath holes, cracks, branches, etc;
- Presence of smooth edges with dark marks and urine stains at potential entrances to roosts;

- Adjoining habitats which are likely to be important to bats, including the river corridor, and hedge / treelines within the survey area that offer a variety of potential foraging, roosting and commuting opportunities for bats; and,
- Adjoining potential roosts / known roosts identified. This raises the likelihood of a tree being of benefit as bats may move roosts if the roost becomes too hot or cold during roosting and a nearby alternative roost is highly desirable.

The treelines within the Site were subject to transect surveys, while trees along the eastern boundary of the Site were subject to both vantage point and transect surveys due to the presence of bat roost potential features.

2.2.3 Dusk Emergence and Activity Surveys

Two dusk emergence and activity surveys took place at the Site, the first on 3rd August 2023 and the second on 22nd August 2023. The surveys commenced 15 minutes before sunset and ended two hours after sunset, therefore encompassing the typical emergence times of Irish bat species. Two predetermined vantage points ('VPs') took place for one hour and 15 minutes and were designed to survey all trees that the tree inspection identified as having potential roost features ('PRFs'). These trees were surveyed so they could be monitored for bat emergence. Transects took place for one hour after the VPs and aimed to capture bat activity levels within the wider survey area and to determine what areas within the survey area are important habitats for foraging and commuting bats.

Two MOR Environmental Ecologists surveyed separate locations of the Site- see Figure 2-1 below for full details of the transects walked during the surveys.

A combination of visual observation and listening to ultrasonic bat calls using an Echo Meter Touch2 Pro (Apple IOS) were used throughout the dusk emergence and activity surveys. Bat calls were recorded using this Echo Meter Touch2 Pro and stored on the EchoMeter App.

Figure 2-1: Bat Emergence and Activity Survey VPs and Transects

2.2.4 Data Analysis

The bat recordings taken during the surveys were analysed using the software Kaleidoscope Pro to aid in the identification of bat species present. A combination of the visual observations taken during the survey and the number of bat passes [1] identified on the recordings were used to determine bat activity levels within the area.

All sound file data recorded during the bat surveys was analysed using Kaleidoscope Pro Software. The 'auto-ID' function was used to batch assign the top auto-ID species for each sound file. This approach allows identification of bats to genus level for *Myotis* species, and to species level for other bats found in Ireland. Separation of *Myotis* species is complicated by the high degree of overlap between call characteristics. This software can also automatically sort sound files that contain only noise ('non-bat') from sound files that contain bat passes.

All non-noise recordings taken on the surveys were manually checked by a capable bat acoustic analyst.

2.3 Survey Limitations

Bat surveys are a snapshot of the bat activity within an area at the time of surveying. It is therefore important that bat surveys are comprised of a number of surveys designed to provide as much information on the at usage of the area. Therefore, a combination of surveys was used to determine the importance of the survey area on local bat populations.

All survey work was conducted in accordance with current best practice guidelines, which dictate that bat surveys should be undertaken when there is no rain or wind, and the temperature is above 10°C.

During the dusk bat surveys, temperatures were between 12°C and 17°C Table 2-1 below) decreasing at the end of the survey periods.

Table 2-1: Bat Survey Metadata

Date	Survey Type	Sunset / Sunrise	Survey Times (Start-End)	Weather	Temperature (°C) Start - End
03/08/2023	Dusk	21:18	21:03 - 23:18	Dry, light breeze	14°C -12°C
22/08/2023	Dusk	20:38	20:23 - 22:38	Dry, no breeze	17°C -15°C

[1] It is important to acknowledge that bat calls provide a measure of bat activity rather than the number of individuals in a population. In practice, bat activity (as, for example, represented by 100 recordings) could be from 100 bats passing the detector or one bat passing 100 times [2].

3 RESULTS

3.1 Desk-Based Results

Prior to conducting the field surveys, a desk-based review of information sources was completed.

Four of the nine resident bat species found in Ireland- common pipistrelle, soprano pipistrelle, Daubenton's bat and Leisler's bat, have been recorded within a 2km radius of the Site within the past ten years [5].

Table 3-1 below provides details of the habitat suitability index for the Site [5]. The habitat suitability index identifies the geographical areas that are suitable for individual species. The index ranges from 0-100, with 100 being the most favourable to bats. The index presented is for all species combined, in addition to the individual species indices within the Site.

From the indices, it can be established that the study area has an overall moderate habitat suitability index range of 21-28. The habitat suitability for Irish bats within the area ranges from 'very low' to 'high'. Excluding the lesser horseshoe bat and Nathusius pipistrelle, which have a 'very low' and 'low' habitat suitability for the Site, respectively, all of the other listed species are likely to occur within the area.

Table 3-1: Habitat Suitability Index

Bat Species	Suitability Index Range	Suitability Index Level
All Bat Species	21-28	Moderate
Soprano Pipistrelle *(Pipistrellus pygmaeus)*	31-38	Moderate
Brown Long-eared Bat (*Plecotus auritus)*	39-49	High
Common Pipistrelle (*Pipistrellus pipistrellus)*	31-38	Moderate
Lesser Horseshoe Bat (*Rhinolophus hipposideros)*	0-4	Very Low
Whiskered Bat *(Myotis mystacinus)*	32-44	High
Daubenton's Bat *(Myotis daubentonii)*	22-29	Moderate
Leisler's bat *(Nyctalus leisleri)*	30-37	Moderate
Nathusius' Pipistrelle *(Pipistrellus nathusii)*	0-18	Low
Natterer's Bat *(Myotis nattereri)*	27-36	Moderate

3.2 Field Based Results

The Site walkover identified the potential for bats to use the trees on-site for roosting. Additionally, the habitats on-site and within the vicinity of the Site can provide suitable foraging and commuting habitats for bats.

3.2.1 Tree Inspection

The tree inspection survey concluded that two trees on-site had roost potential. This conclusion was based on the presence of ivy, cracks and crevices on the trunks and branches of the trees assessed; refer to Table 3-2 and Figure 3-1 below.

Table 3-2 provides details of the assessments of the trees which are due to be removed for the Proposed Development, and Figure 3-1 shows the location of the trees.

Table 3-2: Tree Survey results

Tree No.	Species	Bat Potential	Ivy	Knotholes	Loose Bark	Cracks and Crevices
1	Common Ash (*Fraxinus excelsior)*	√	√	X	X	√
2	Common Ash (*Fraxinus excelsior)*	√	√	X	X	√

Figure 3-1: Potential Roost Feature Trees

3.2.2 Dusk Survey Results

The surveyors identified bats foraging and commuting along the hedgerow / treelines traversing through the Site (refer to Figure 3-2 below) during both dusk surveys. Moderate bat activity was recorded during both surveys in August 2023, and no bats were observed to be roosting in the trees within the Site.

3.2.2.1 Dusk 3rd August 2023

Sunset was at 21:18.

<u>VP1/T1</u>

The first bat recorded at VP1 was a common pipistrelle at 21:54. Shortly afterwards at 22:02 a Leisler's bat was also recorded. Finally, a common pipistrelle was again recorded at 22:04.

Activity was higher during the activity survey, with common pipistrelle, Leisler's bat and soprano pipistrelle recorded when the surveyor was walking the transect. The last bat recorded was at 23:13.

Overall, there was moderate bat activity at VP1/T1 with circa (ca.) 20 bat passes recorded per hour. Common pipistrelle had ca. 17 passes per hour, Leisler's bat had ca. 2 passes per hour and soprano pipistrelle had ca. 1 pass per hour.

VP2/T2

The first bat recorded at VP2 was a common pipistrelle at 22:03, passing multiple times commuting over the hedgerow / treeline surveyed. One singular brown long-eared bat call was also recorded at 22:07, but this bat was not observed by the surveyor.

Activity was also low during the transect survey, and common pipistrelle was the only species recorded. The last bat recorded was at 22:44.

Overall, there was moderate bat activity at VP2/T2, with ca. 19 bat passes recorded per hour. Common pipistrelle had ca. 18 passes per hour and brown long-eared bat had ca. 1 pass per hour.

3.2.2.2 Dusk 22nd August 2023

Sunset was at 20:38.

VP1/T1

The first bat recorded at VP1 was a common pipistrelle at 21:24, seen commuting and passing multiple times over the hedgerow / treeline. One soprano pipistrelle was also recorded during the emergence survey, but not observed by the surveyor.

No bats were visible during the transect survey, but higher levels of bat activity were recorded. Common pipistrelle, soprano pipistrelle, brown long-eared bat, Leisler's bat and *Myotis* species were recorded during the transect survey. The last bat recorded was at 22:39.

Overall, there was high bat activity recorded at VP1/T1, with ca. 52 bat passes recorded per hour. Common pipistrelle had ca. 30 passes per hour, soprano pipistrelle had ca. 14 passes per hour, brown long-eared bat had ca. six passes per hour, Leisler's bat had ca. 1 pass per hour and *Myotis* species had ca. 1 pass per hour.

VP2/T2

The first bat recorded at VP2 was a soprano pipistrelle at 21:17, but not observed by the surveyor. Shortly afterwards at 21:23 a common pipistrelle was observed commuting back and forth over the hedgerow / treeline.

Activity was higher during the transect survey, with common pipistrelle, soprano pipistrelle, Leisler's bat, brown long-eared bat and *Myotis* species were recorded. Bats were observed foraging and commuting along the hedgerow / treeline. The last bat recorded was at 22:38.

Overall, there was moderate bat activity recorded at VP2/T2, with ca. 29 bat passes recorded per hour. Common pipistrelle had ca. 20 passes per hour, soprano pipistrelle had ca. 6 passes per hour, Leisler's bat had ca. 1 pass per hour, brown long-eared bat had ca. 1 pass per hour and *Myotis* species had ca. 1 pass per hour.

Refer to Figure 3-2 below for full details of the bat activity within the Site.

Figure 3-2: Bat Activity within the Site

3.3 Overall Results

The following bats were recorded as a result of the dusk emergence and activity surveys:

- Common pipistrelle, soprano pipistrelle, Leisler's bat, brown long-eared bat and *Myotis* species were recorded commuting / foraging within the Site. The most frequently encountered species of these were common pipistrelle, followed by soprano pipistrelle. These species are relatively wide-spread and the most commonly encountered species within Ireland;
- Moderate to high levels of bats were recorded foraging and commuting over the hedgerow / treeline that was surveyed within the Site; and,
- No bats were identified to be roosting within the trees in the Site.

Based on the levels of activity and movement of the bats recorded during the surveys, it is considered that the Site is of high local value to foraging / commuting bats

4 IMPACT ASSESSMENT AND MITIGATION

The following bat species have been recorded during the dusk and dawn transect bat surveys: common pipistrelle, soprano pipistrelle, Leisler's bat, brown long-eared bat and *Myotis* species. Taking a precautionary approach and assuming that the *Myotis* bat species recorded were from all three *Myotis* species found in Ireland (whiskered bat, Natterer's bat and Daubenton's bat), this represents seven of the nine resident bat species found in Ireland. Nathusius' pipistrelle and the lesser horseshoe bat were the only species not recorded on-site. All bat species recorded during the bat surveys are Annex IV species under the EU Habitats Directive and all have a favourable status in Ireland.

Bat species within the Site will be affected by both the construction phase and operational phase of the Proposed Development. The impact assessment and mitigation will be undertaken in relation to the seven bat species recorded within the Site: common pipistrelle, soprano pipistrelle, Leisler's bat, brown long-eared bat, whiskered bat, Natterer's bat and Daubenton's bat.

4.1 Potential Impacts on Bats

The Proposed Development will involve a land use change from agricultural grassland to an active quarry (pit) with regards to the extension lands. Additionally, the hedgerow / treelines that traverse the Site will be removed.

Principal impacts of the Proposed Development, in general, on bat fauna may be summarised as follows:

4.1.1 Loss of Habitat

The surveys did not identify any bat roosts within the trees surveyed. However, there is commuting and foraging habitats within the Site. The hedgerow / treelines that border the Site will be retained for the Proposed Development, but the hedgerows and hedgerow / treelines that traverse the Site will be removed. Additionally, the grassland will be removed. A 10m buffer will be maintained between the extraction areas and the maintained hedgerow / treelines that border the Site, ensuring that bats can still use these linear features for foraging and commuting.

However, due to the removal of foraging and commuting habitats for bats, it is considered that without the appropriate mitigation measures to compensate for the loss of foraging and commuting habitat for bats that the Proposed Development could have a negative impact on bat species.

4.1.2 Lighting of the General Area (street lighting, security lighting etc.)

Lighting for the Proposed Development will potentially impact on bat species in relation to commuting and foraging potential within survey area and the wider area. The degree of this impact is dependent on the sensitivity of the bat species, as some bats are more tolerant of lighting. *Pipistrellus* species and Leisler's bat will tolerate low levels of lighting, while brown long-eared bats and *Myotis* species are very sensitive to lighting and require the light levels to be below 1lux.

However, as no permanent lighting is proposed as part of the Proposed Development, there will be no adverse impacts from lighting to bats as part of the Proposed Development.

4.2 Mitigation Measures

The following mitigation measures are recommended to reduce the potential impact of the Proposed Development on local bat populations.

4.2.1 Planting of Landscaped Berm

During the Site preparation works, a berm will be constructed from overburden stripped as part of the preparation works in the extension lands. The berm will be ca. 4m wide and ca. 2m high and will be planted with mixed sward grass species to aid screening and preserve the soil quality. This landscaped berm will provide suitable foraging and commuting habitat for bats and will partially compensate for the removal of the hedgerow / treelines on-site until such a time that field boundaries are reinstated.

4.2.2 Proposed Woodland Planting

As part of the restoration plan, it is proposed to create a new woodland habitat in the northeast of the land ownership boundary. This woodland will be ca. 0.7hectare ('ha.') in size. This habitat will be planted during the first 2 years of the Proposed Development commencing. The early planting of this habitat will aid its establishment during operations and will ensure that bats will be able to use this habitat for foraging in the long term.

4.2.3 Protection for Retained Hedgerow / Treelines

All bordering hedgerow / treelines will be retained and protected for the lifetime of the Proposed Development. As per Objective BI O26 of the KCDP [9], care will be required to protect trees from both direct and indirect harm / disturbances. The following protection measures will be adhered to during the works along the northern and southern boundaries of the Site:

- All extraction works will be set back 10m from the retained hedgerow / treelines;
- No materials, equipment or machinery will be stored within close proximity to retained hedgerows / treelines;
- In order for treeline protection measures to work effectively, all personnel associated with the operation of heavy plant machinery must be familiar with the above principles for the protection of treelines; and,
- Notice boards, wires, etc. will not be attached to any trees.

4.2.4 Restoration Plan

The proposed Restoration Plan submitted as part of the overall planning application provides details of how the Site will be restored once the quarrying activities have ceased.

Historic hedgerow / treelines that were removed to facilitate the Proposed Development will be re-planted during the restoration of the Site, reinstating suitable foraging and commuting habitats for bats. Additionally, the extracted areas of the Site will be restored to grassland which, once overgrown, will provide potential foraging habitat for bats. The settlement lagoons on-site will also be retained as part of the Restoration Plan, which will attract insects available as prey for foraging bats.

5 CONCLUSIONS

The bat surveys undertaken for the Proposed Development included a walkover of the lands within the Site, a ground level tree inspection and two dusk emergence and activity surveys. The walkover and tree inspection identified two trees with features suitable for roosting bats within the Site boundary. No bats were observed roosting within these trees, and moderate to high levels of bat activity were recorded during the surveys on-site. No bats were recorded within 15 minutes of sunset on either dusk bat survey. This indicates that bat roosts may not be located directly within the vicinity of the Site, but bats were recorded and observed using the Site for foraging and commuting. The species recorded during the bat surveys included soprano pipistrelle, common pipistrelle, Leisler's bats, brown long-eared bats, and *Myotis* species. As no bats were roosting on-site, no derogation licence is required from the NPWS to facilitate the Proposed Development.

The Proposed Development will result in some loss of commuting / foraging habitats for bats by the removal of hedgerows that traverse through the Site, the removal of the agricultural grassland and the change in land use on-site from agricultural farm to an active quarry. However, mitigation measures have been included which will ensure that bats are still able to use the retained boundary hedgerow / treelines for foraging and commuting. A small area of woodland proposed as part of the restoration plan will also provide some potential foraging habitat for bats.

Overall, the Site is considered to be of no value to roosting bats and of high local importance for commuting and foraging bats within the local area, as the majority of the Site is dark at night and contains good commuting and foraging habitats for bats. However, it is considered that if the mitigation measures presented within this report are followed, the potential impacts on bats will be reduced and the significant impacts from the Proposed Development on bats will be avoided.

6 REFERENCES

[1] National Roads Authority, “Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes,” 2006.

[2] J. Collins, “Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn),” The Bat Conservation Trust, London, 2023.

[3] Kelleher, C., Marnell, F. & Mullen E., “Bat Mitigation Guidlines for Ireland- V2. Irish Wildlife Manuals, No. 134.,” Department of Housing, Local Government and Heritage, Dublin, 2022.

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[8] B. C. Trust, “Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn),” The Bat Conservation Trust, London, 2016.

[9] KCC, “Kildare County Developemnt Plan 2023-2029,” Kildare County Council , 2023.

APPENDIX 6-2

November 2024

Plazamont Ltd. T/A Dan Morrissey & Co.

Restoration Plan

Continuance of Use & Extension to Ballyburn Pit

On behalf of

Dan Morrissey & Co (Plazamont Ltd)

Ballyburn Upper, Gorteenvacan, Knockbane, Castledermot, Co. Kildare

MALONE O'REGAN ENVIRONMENTAL

QUALITY
I.S. EN ISO 9001:2015
NSAI Certified

MALONE O'REGAN

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Title: Restoration Plan, Continuance of Use & Extension to Ballyburn Pit, Dan Morrissey & Co (Plazamont Ltd), Ballyburn Upper, Gorteenvacan, Knockbane, Castledermot, Co. Kildare

Job Number: E2122

Prepared By: Stephanie Lonergan **Signed:** S. Lonergan

Checked By: Sarah de Courcy **Signed:**

Approved By: David Dwyer **Signed:**

Revision Record

Issue No.	Date	Description	Remark	Prepared	Checked	Approved
01	13/11/24	Report	Final	SL	SdC	DD

Restoration Plan

Continuance of Use & Extension to Ballyburn Pit

Dan Morrissey & Co (Plazamont Ltd)

Ballyburn Upper, Gorteenvacan, Knockbane, Castledermot, Co. Kildare

Contents

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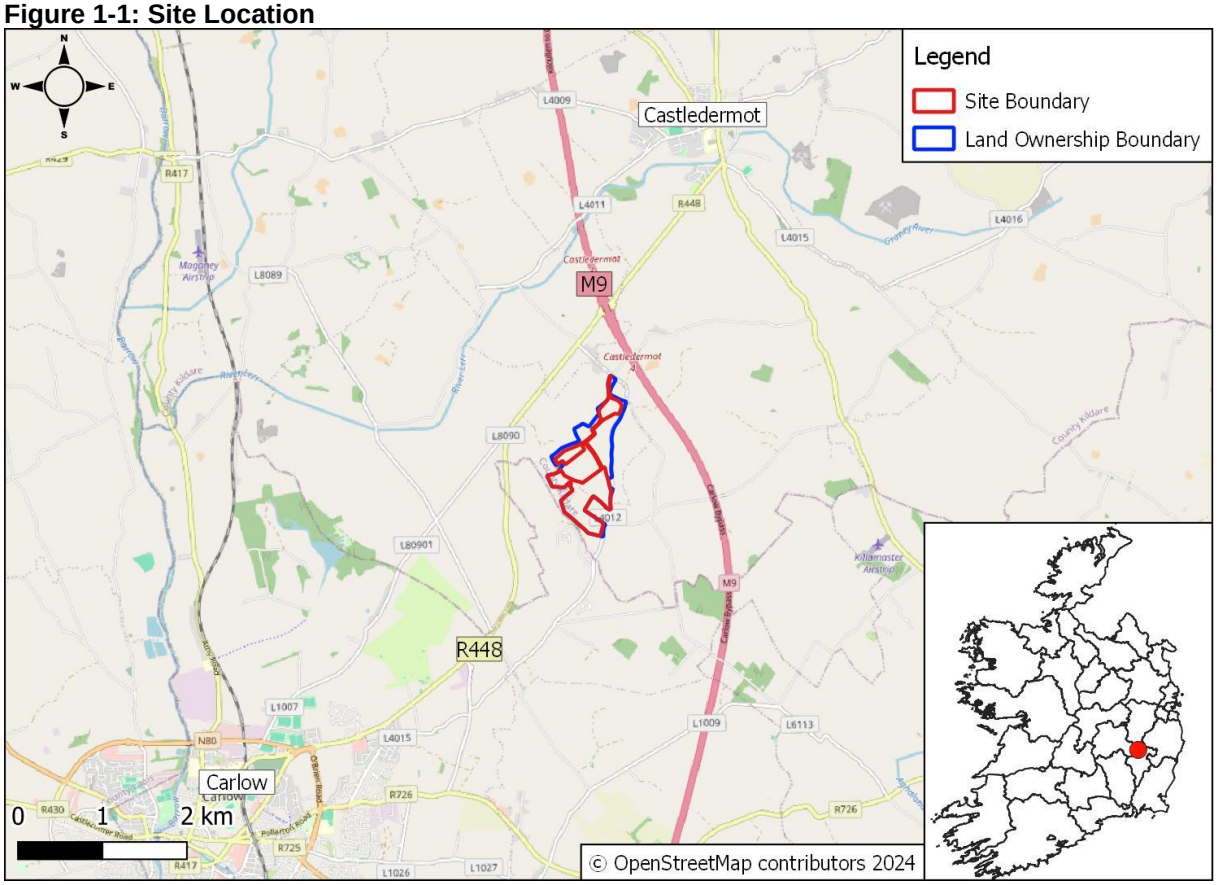
1 INTRODUCTION

Malone O'Regan Environmental ('MOR Environmental') has been commissioned by Dan Morrissey & Co. (trading as Plazamont Ltd.), hereafter referred to as 'the Applicant' to prepare a Restoration Plan in support of a planning application to Kildare County Council ('KCC'). This Restoration Plan will apply to the development consisting of:

- The continuance of use of existing site infrastructure, including all processing equipment, machinery, entrance, office/welfare facilities, carpark, wheel wash, weighbridge, haul routes and other ancillary infrastructure;
- The extension of the Site to known quality reserves in the south (circa ('ca.') 28.3 hectares ('ha')). The extraction of this extension area will result in a pit floor at ca. 71m OD, which is above the winter water table. The applicant intends to extract ca. 1.7million m3 of aggregates or ca. 3, 060, 000 tonnes ('t') over the lifetime of the project; and,
- The importation of 1,125,000t of clean, uncontaminated soil and stone by-product materials to complement overburden originating from the Site during the restoration process (which will be restored to between 73/74m OD).

The above works are collectively presented in this report as the 'Proposed Development'. All works will occur on a site covering an area of ca. 37.8 ha within the townlands of Ballyburn Upper, Gorteenvacan, and Knockbane Castledermot Co. Kildare (Ordnance Survey Ireland Grid Reference ITM 676667 681155); refer to the redline boundary presented in Figure 1-1 below for context ('the Site').

Figure 1-1: Site Location



1.1 Purpose

The management measures described in this Restoration Plan are based on the ecological baseline survey works undertaken as part of the ecological assessment of the Site as outlined in Chapter 6 – Biodiversity in the Environmental Impact Assessment Report ('EIAR') prepared in support of this planning application.

A restoration plan was prepared for Ballyburn Pit as part of a planning application to KCC in 2005 (planning reference: 05/2091 and An Bord Pleanála ('ABP') reference: PL09.220222). This Restoration Plan seeks to incorporate the Proposed Development into the existing restoration plan for Ballyburn Pit. As such, this Restoration Plan will supersede the previous restoration plan where overlaps occur.

This Restoration Plan includes ecological enhancement measures and has taken full cognisance of protected and notable species that have the potential to be present within the area after the closure of the Site.

1.2 Statement of Authority

The Restoration Plan was prepared under the direction of Dyfrig Hubble, Associate Director of Ecology, who provided peer review and support to the project.

Dyfrig Hubble has a B.Sc. (Hons) in Tropical Environmental Science and an M.Sc. in Environmental Forestry. Dyfrig is a full member of the Chartered Institute of Ecology and Environmental Management. Dyfrig has over 18 years' experience working in the ecological consultancy sector including habitat appraisals and specialist species specific surveys. Dyfrig has extensive experience in the preparation of Habitat Engagement / Restoration Plans and Habitat Management Plans for various projects within both the UK and Ireland.

1.3 Methodology

This Restoration Plan has been prepared in accordance with best practice guidelines and legislation, including:

- Wildlife Habitats & the Extractive Industry - Guidelines for the Protection of Biodiversity within the Extractive Industry [1]; and,
- Environmental Management in the Extractive Industry (Non-Scheduled Minerals) [2].

1.4 Overview of Pit Restoration

Quarries and pits can be of very high value for nature conservation and are often termed biodiversity hotspots. Mineral extraction creates a large variety of landscapes and habitats which support numerous floral and faunal species. Over the years, biologists have generated an abundance of evidence highlighting the importance of quarries for rare floral species such as red hemp nettle, insects such as bumble bees and dragonflies, and bird species such as sand martin and ringed plover.

This Restoration Plan provides detailed guidance for the restoration of the Site in keeping with the previously permitted plan.

1.5 Structure of the Restoration Plan

The structure of this Restoration Plan is as follows:

- Site Analysis: provides contextual detail;
- Restoration Plan: details the rehabilitation works proposed at the Site; and,
- Monitoring and Aftercare: provides details regarding the monitoring and review of the plan as the rehabilitation strategy progresses.

2 SITE ANALYSIS

2.1 Previous Restoration Plan

A Restoration Plan was submitted as part of a planning application to KCC under the planning reference: 05/2091 and ABP reference: PL09.220222.

This Restoration Plan included for the restoration of the permitted quarry area to 71m ACD. As part of this plan, the quarry area (including the extension lands) were to be restored to agricultural use suitable for grazing and/or tillage. The restoration works were to be done on an ongoing basis as extraction progressed through Ballyburn Pit.

Therefore, restoration has already occurred in areas where lands have been extracted to their permitted depth. Plate 2-1 below provides a view of the restored agricultural land in the north central portion of Ballyburn Pit.

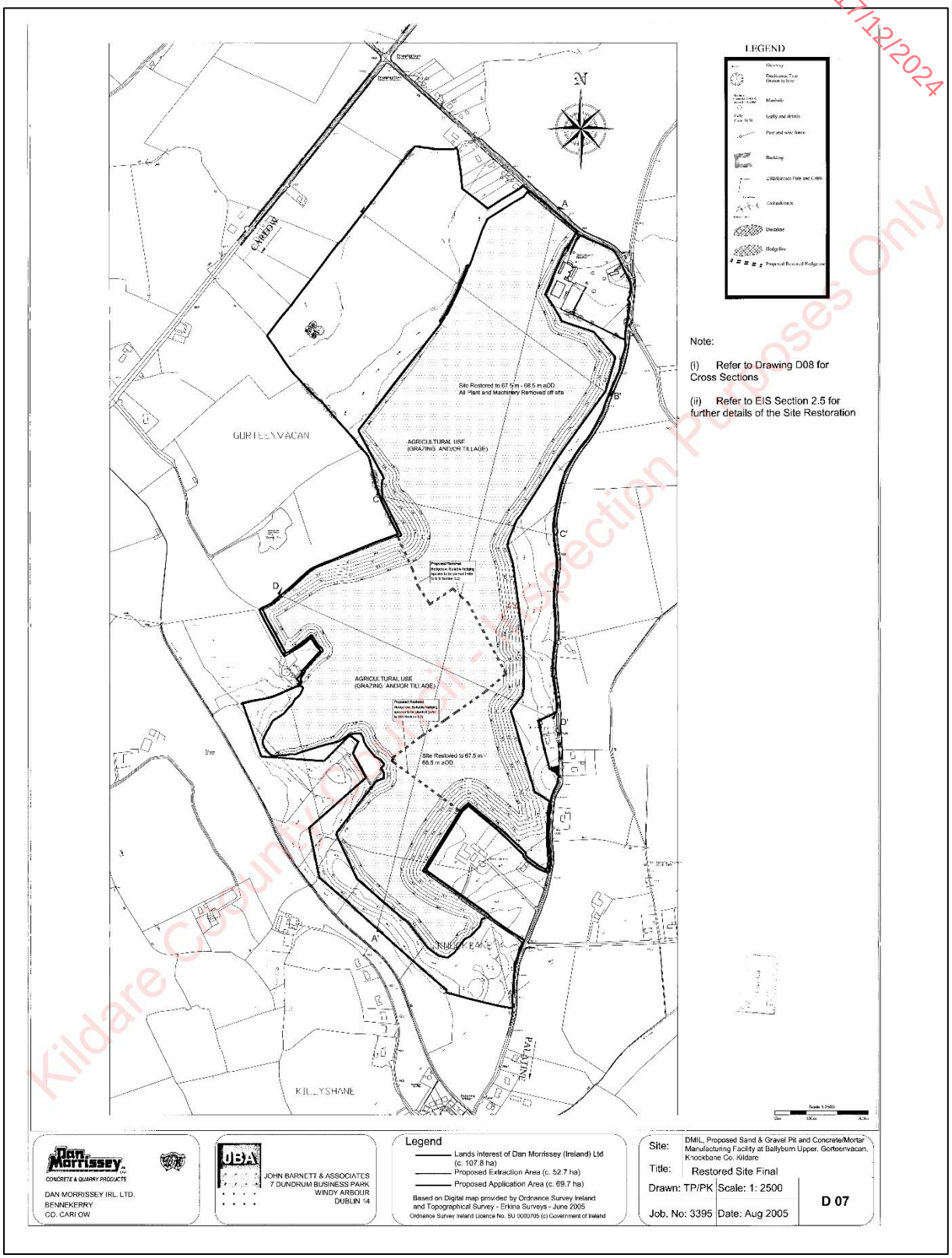
Plate 2-1: Restored Agricultural Land to the North

The following measures were also included in the previous restoration plan:

- All hedgerows removed to facilitate extraction were to be re-planted with suitable species;
- Topsoils and subsoils were to be stripped separately and conserved for restoration;
- Steep marginal slopes were to be planted with trees or graded gently into agricultural land; and,
- Necessary infrastructure (tracks and fences) were to be installed to facilitate agriculture.

Refer to Figure 2-1 below for context.

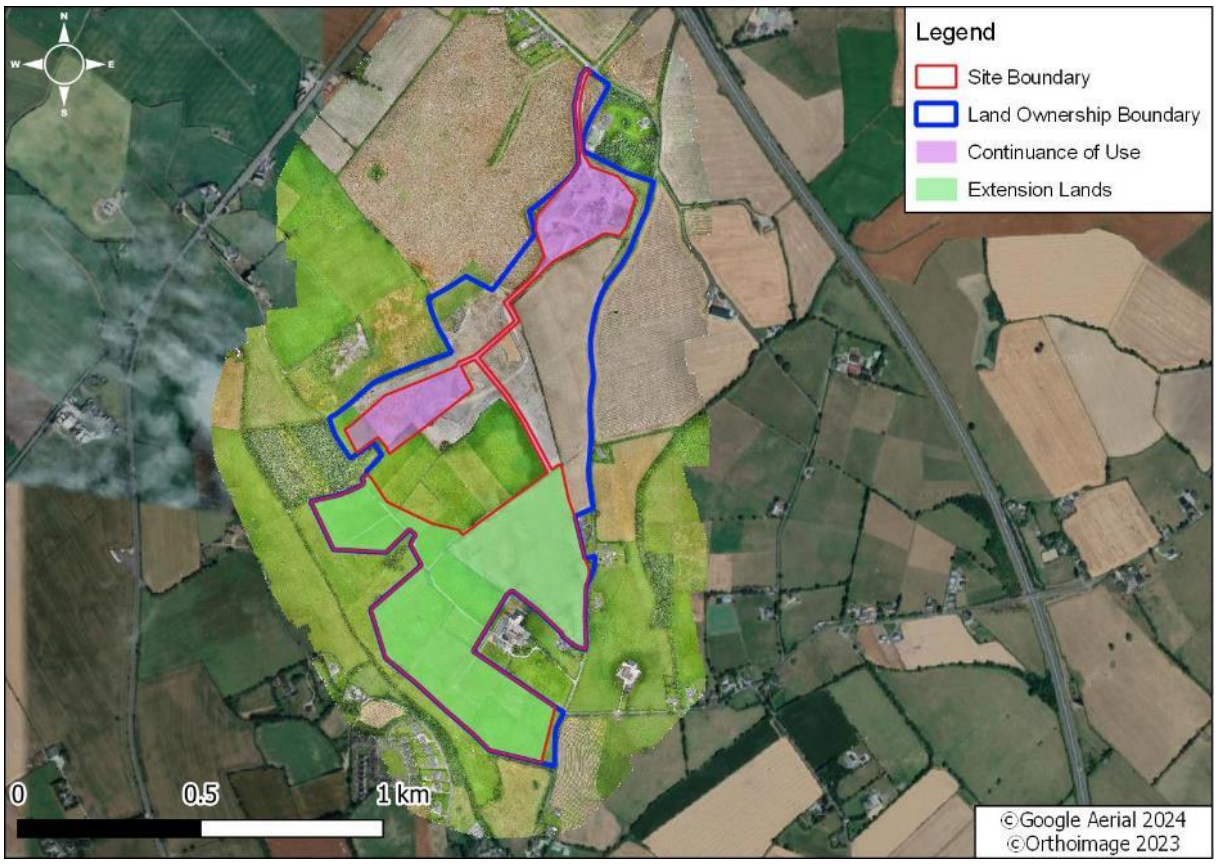
Figure 2-1: Permitted Restoration Plan submitted under planning ref. 05/2091 and An Bord Pleanála PL09.220222.



2.2 Existing Site

The extension lands are located within the southern portion of the landholding. These lands are classified as, 'greenfield' with no history of development. The extension lands comprised of arable crops and improved agricultural grasslands bound by hedgerows / treelines. The extension lands cover an area of ca. 28.3ha. The rest of the Site is comprised of the existing permitted Ballyburn Pit. Figure 2-2 below presents the layout of the Proposed Development and the distinction between extension lands and those which constitute a continuance of use (the existing quarry).

Figure 2-2: Proposed Development Layout



The Proposed Development will utilise the existing access roads for Ballyburn Pit – the local road L4012.

The Site is bordered to the south, east and west by agricultural grasslands and to the south by farm and residential dwellings.

2.3 Ecological Context

2.3.1 Habitats

The following habitats were identified on-site using Fossitt's, '*A Guide to Habitats in Ireland*' [3]:

- Improved Agricultural Grassland (GA1);
- Hedgerows / Treelines (WL1 / WL2);
- Scrub (WS1);
- Arable Crops (BC1);

- Roads (BL3);
- Artificial Ponds (FL8);
- Spoil and Bare Ground (ED2); and,
- Active Quarries (ED4).

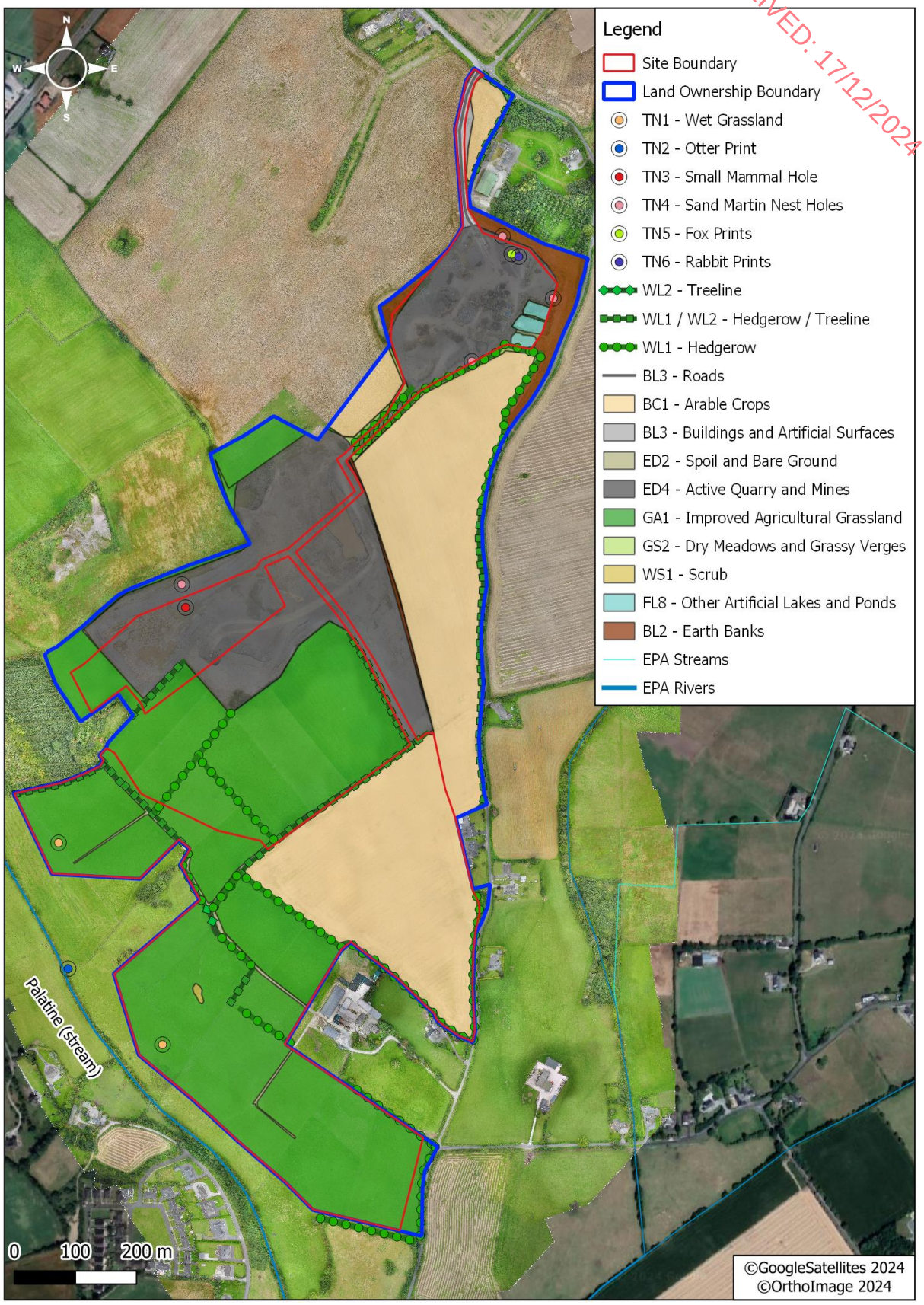
Refer to Figure 2-3 for context.

2.3.2 Species

The following species were identified on-site (either directly through sight or sound; or indirectly through prints, scats or other field evidence) during the 2023 -2024 field surveys:

- Brown long-eared bat (*Plecotus auritus*);
- Buzzard (*Buteo buteo*);
- Common pipistrelle (*Pipistrellus pipistrellus*);
- Deer (*Cervus spp.*);
- European rabbit (*Oryctolagus cuniculus*);
- Fox (*Vulpes vulpes*);
- Goldfinch (*Carduelis carduelis*);
- Leisler's bat (*Nyctalus leisleri);*
- Nathusius' pipistrelle (*Pipistrellus nathusii*);
- Otter (*Lutra lutra)*;
- Sand martin (*Riperia riperia*);
- Soprano pipistrelle (*Pipistrellus pygmaeus*); and,
- *Myotis* bat species – Daubenton's bat (*Myotis daubentonii*), Natterer's bat (*Myotis nattereri*) and whiskered bat (*Myotis mystacinus)*.

Figure 2-3: Habitat Map



3 RESTORATION PLAN

The Restoration Plan will supersede the restoration plan submitted under planning reference 05/2091 (AB PL09.220222) where relevant (i.e. where the redline intersects planning reference 05/2091). Consistent with the previous restoration plan, upon removal of the aggregate reserve, the Site will undergo restoration on a phased basis. The Site will be restored to between 73/74 m OD.

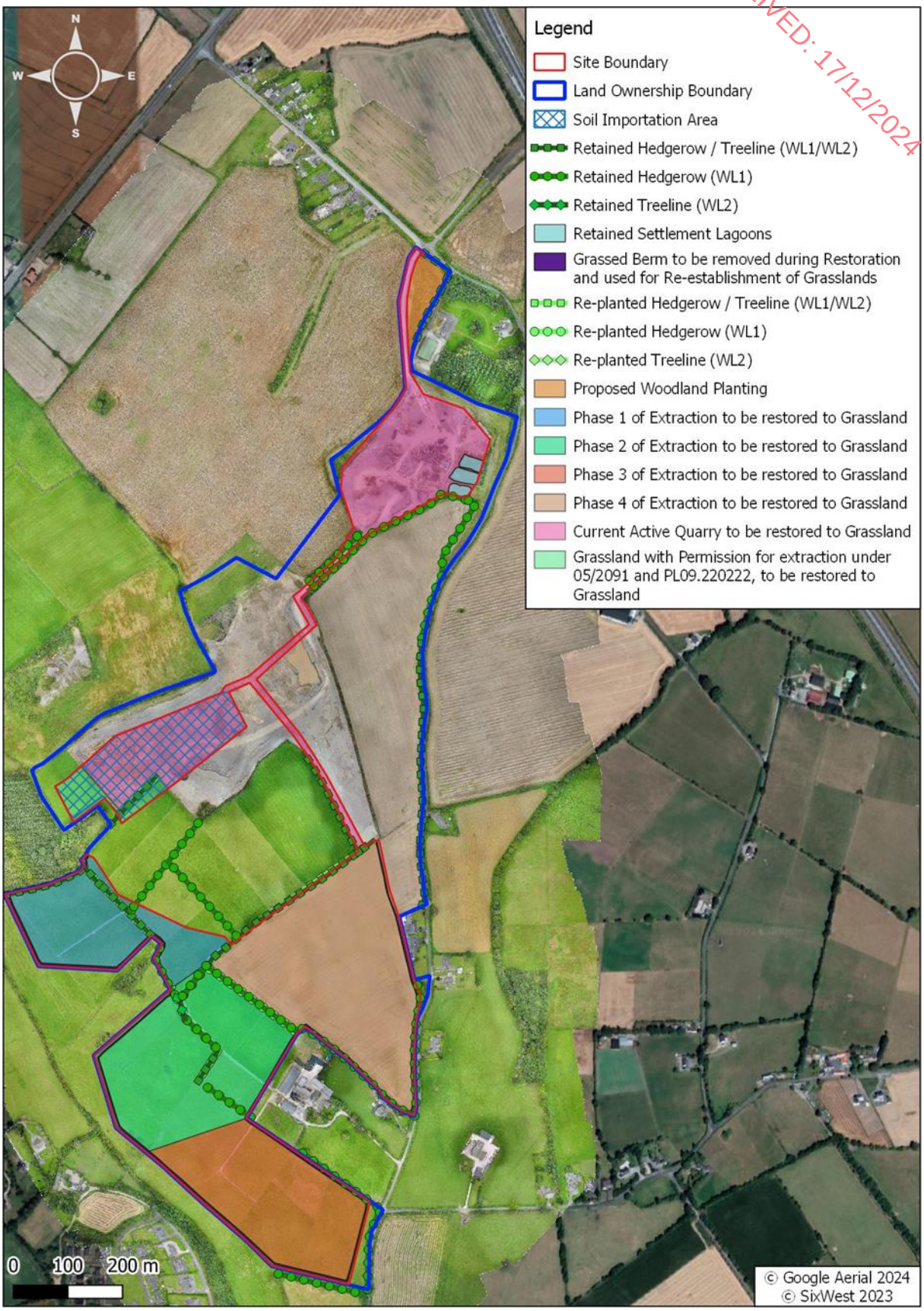
The extension lands have been divided into four zones, A1, A2, B1 and B2. These zones will be extracted and restored in a sequential manner. Site preparation works will commence in Zone A1. When aggregates in A1 are ready for extraction, Site preparation works will commence in Zone A2. This process will be repeated until lands have been excavated down to the final depth (71m OD). In a similar vein, once the final depth has been reached, restoration works will commence on a zone-by-zone basis. The intention for the Site is to restore the land to its historic agricultural use which will involve reinstating the historic field boundaries where appropriate.

This restoration plan encompasses two key areas:

- Removing overburden during the Site clearance works to use for restoration; and,
- The phased extraction and restoration of the greenfield lands within the south and southwest of the Site.

The proposed restoration of the Site is presented in Figure 3-1.

Figure 3-1: Proposed Restoration Plan



3.1 Site Preparation

3.1.1 Creation and Planting of Grassed Berm

The berm will be constructed from overburden stripped as part of the preparation works in the extension lands. The berm will be ca. 4m wide and 2m high and will be sown with a mixed sward provide features which may offer biodiversity enhancement.

The berm will be constructed along the periphery of the Zone A1, A2, B1 and B2. The berm will be sown with grass sward species to ensure the soil is protected and stabilised for future use during the final site restoration works. The berms will be planted with grass to preserve soil quality for future use in the restoration of the Site (see Table 3-1 below).

The materials within the berm will be used as the final topsoil layer prior to reseeding when replacing the topsoil of extracted grasslands during the restoration of the Site (with the exception of those berms that were planted with trees).

The construction of the berms on-site will be supervised by the Ecological Clerk of Works ('ECoW') to ensure that no impacts occur to bordering hedgerows / treelines.

Table 3-1: Berm Mixed-sward Grass Planting Mix

Common Name	Scientific Name	Percentage of Mixture (%)
Grasses		
Perennial ryegrass	*Lolium perenne*	50%
Timothy	*Phleum pratense*	8%
Meadow fescue	*Festuca pratensis*	8%
Legumes		
White clover	*Trifolium repens*	8%
Red Clover	*Trifolium pratense*	8%
Sainfoin	*Onobrychis*	8%
Herbs		
Ribwort plantain	*Plantago lanceolata*	4%
Chicory	*Cichorium intybus*	4%

3.1.2 Woodland Planting

To partially compensate for the removal of ca. 1216m of hedgerow / treelines to facilitate the Proposed Development, it is proposed to create a new woodland habitat in the northeast of the land ownership boundary. This woodland will be ca. 0.7ha in size.

This habitat will be planted within the first 2 years of the Proposed Development, prior to the removal of vegetation on-site. The early planting of this habitat will aid its establishment during operations and will ensure that nesting and foraging opportunities are maintained for birds and mammals in the long term.

All planting will consist of native or naturalised species that are prevalent in the immediate area and will provide a source of food for a variety of species throughout the year. For example, the foliage and seeds from beech trees are eaten by a variety of species and acorns

from oak trees are known to be a valuable food source. In addition, as these trees mature and develop cracks and crevices in the bark, they will provide roosting opportunities for hole-nesting birds, bats and other wood boring insects. Refer to Table 3-2 below for details on a suitable woodland species mix.

Advanced nursery stock will be used as part of the planting mix. Trees and shrubs will be planted directly into square tree pits. The tree pits will be at least 100mm greater than the root system with the depth not exceeding the root ball. The pit is to be backfilled with a mix of topsoil, planting compost and polymer granular. The planting will take place within the first available season (November to March), and any trees that fail to become established within 5 years of planting will be replaced by trees of a similar size / species within the next planting season.

Table 3-2: Example Woodland Species Mix

Common Name	***Scientific Name***
Woodland Trees (Upper and Lower Canopy)	
Pedunculate oak	*Quercus robur*
Scots pine	*Pinus sylvestrus*
Beech	*Fagus sylvatica*
Ash	*Fraxinus excelsior*
Downy Birch	*Betula pubescens*
Holly	*Ilex aquifolium*
Hawthorn	*Crataegus monogyna*

This habitat will be retained and protected for the lifetime of the Proposed Development.

3.2 Phased Restoration of Active Pit

3.2.1 Dismantling of Grassed Berm

The berm constructed along the periphery of the Zone A1, A2, B1 and B2 will be dismantled after operations have ceased on a phased basis. The topsoil and subsoil within this berm will be used in the restoration of the Site, where possible.

3.2.2 Re-establishment of Grasslands

The material stored within the berms will be used to replace the topsoil layer of the extracted grasslands during the restoration of the Site.

Exhausted areas will be re-levelled into an undulating landscape, and all stockpiles and trenches will be removed from these areas. Stockpiled material and soils stripped from the next phase of extraction will be used to cover the previously exhausted area, allowing for continuous restoration. Soils will be spread to a depth not exceeding 300mm. These areas will then be reseeded.

The grasslands should be sown with multi-species grass swards including grasses, legumes, and herbaceous species. These swards not only provide sources of minerals, protein, and energy for livestock, but the inclusion of nitrogen-fixing legumes will result in a reduced requirement for fertiliser application in future.

The species mix outlined in Table 3-1 above is recommended for the re-establishment of the grasslands on-site. A programme of observation and maintenance, including wetting during periods of dry weather, will be followed to ensure the successful restoration of grassland habitats in these exhausted areas.

3.2.3 Re-planting of Hedgerows and Hedgerow / Treelines

In addition to the re-establishment of grassland habitats, the restoration phase will include the reinstatement of all hedgerows and field boundaries which are removed as part of the extraction works. The removed hedgerows and hedgerow / treelines will be re-planted on a continuous basis as extraction and restoration occurs.

Hedgerows and hedgerow / treelines will be planted across the newly re-established grasslands within the first available planting season. All species will be of local providence, native and / or those that have a known attraction or benefit to local fauna.

Table 3-3 below provides an appropriate planting mix to replace the hedgerow / treelines that will be removed.

Table 3-3: Hedgerow / Treeline Planting Mix

Common Name	**Scientific Name**
High Canopy – Dominants (20%)	
Ash	*Fraxinus excelsior*
Pedunculate oak	*Quercus robur*
Scots pine	*Pinus sylvestris*
Low Canopy – Sub-dominants (20-25%)	
Alder	*Alnus glutinosa*
Downy birch	*Betula pubescens*
Rowan	*Sorbus Aucuparia*
Understory and Fringe – Higher Shrubs (20-40%)	
Bird Cherry	*Prunus padus*
Elder	*Sambucus nigra*
Hazel	*Corylus avellana*
Holly	*Ilex aquifolium*
Hawthorn	*Crataegus monogyna*
Goat willow	*Salix caprea*
Understorey and Edge – Lower Shrubs (15-25%)	
Blackthorn	*Prunus spinosa*
Dog-rose	*Rosa canina*

Common Name	Scientific Name
Spindle	*Euonymus europaeus*

The hedgerows will be re-planted with native species in a tripled staggered row to provide a well-structured hedgerow. A height of 3-4m will be established along all hedgerow / treelines after 2-3 years (3-4 growing seasons).

Annual inspections of the trees will take place for a period of five years to ensure tree health and establishment. Trees that fail to become established within five years of planting will be replaced by trees of a similar size / species within the next planting season.

All newly planted hedgerows will be lightly managed / pruned in Year 2. All pruning and management will take place outside of the nesting and breeding bird season, typically March 1st to August 31st.

3.2.4 Retained Boundary Habitats

A minimum buffer of 10m will be maintained between the proposed extraction area and the retained hedgerows / treelines.

3.2.5 Retained Settlement Lagoons

The three settlement lagoons in the northeast of the Site will be retained when quarrying has finished at the Site. These lagoons will be lined with clay or concrete to ensure water retention within the lagoons. These settlement lagoons will provide suitable habitat for wetland and waterbirds, as well as amphibians.

4 AFTERCARE

4.1 Site Closure and Safety Preparation

This restoration plan has been carefully designed to prevent the creation of potential hazards that may pose a threat to public safety. Following cessation of quarrying activities, the Site will be fully decommissioned within a six-month period.

During this phase of restoration, plant and equipment associated with the operational phase will be removed from the Site. Waste considered unsuitable for re-use or recycling, which includes, *inter alia*, domestic waste, will be disposed of off-site by an appropriately permitted waste contractor at a suitable permitted waste facility. All access routes will be scarred to improve percolation of surface into the ground.

5 REFERENCES

[1] DoAHG, "Wildlife, Habitats & the Extractive Industry," Department of Arts, Heritage and the Gaeltacht, Dublin, 2007.

[2] EPA, "Environmental Management in the Extractive Industry," Environmental Protection Agency, Wexford, 2006.

[3] J. A. Fossitt, A Guide to Habitats in Ireland, Dublin : The Heritage Council, 2000.

APPENDIX 7

APPENDIX 7-1

Drilling Log

Well No.: 23GW101

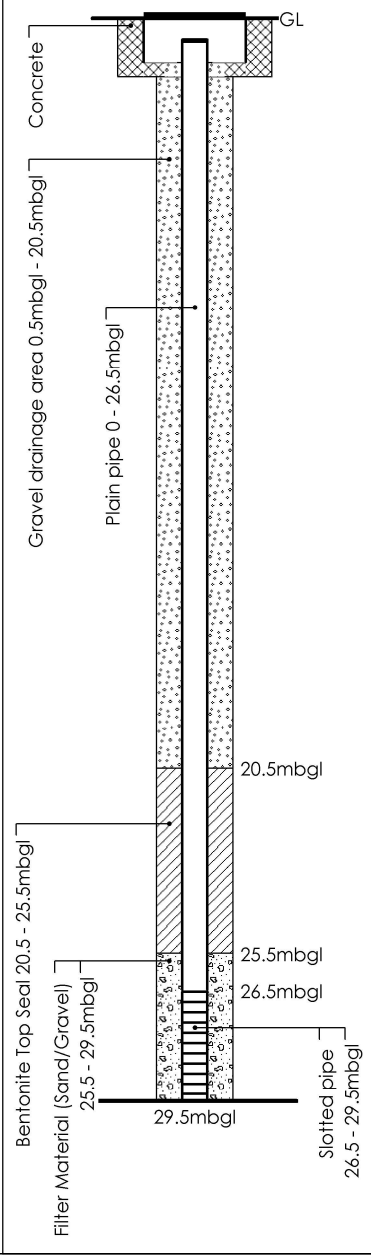
Project No: P1643-0 **Date started:** 24/05/2023 **Easting:** 276548.6

Site: Ballyburn Pit, Co. Carlow **Date finished:** 25/05/2023 **Northing:** 180517.25

Client: Malone O'Regan Environmental Sevices **Elevation:** 73.62mOD

SUBSURFACE PROFILE

Depth	Description	Depth/Elev.	Water Level	Comments
0	**Ground Surface**	73.6		
	Firm brown sandy TOPSOIL	0.0		
	Loose reddish brown slightly gravelly SAND	71.7 1.9		
	Desne brown sub-rounded SAND AND GRAVEL with very frequent cobbles and boulders	69.4 4.2		
	Medium dense brown gravelly SAND	65.9		Water seepage at 7mbgl
10	Medium dense coarse brown sub-rounded SAND AND GRAVEL with occasional silt layers	7.7		
		58.8		
	Firm brown very sandy gravelly SILT	14.8		
20		49.5		
	Firm to stiff grey silty CLAY	24.1		
	Weak to Strong weathered brown GRANITE			Slow water inflow at 26mbgl
		44.1		
30		29.5		



Remarks:

Drilling Contractor: Stephan Petersen

Drilling type: **Scale as shown**

Logged by: JL **Sheet:** 1 of 1

Drilling Log

Well No.: 23GW102

Project No: P1643-0 **Date started:** 24/05/2023 **Easting:** 276332.37

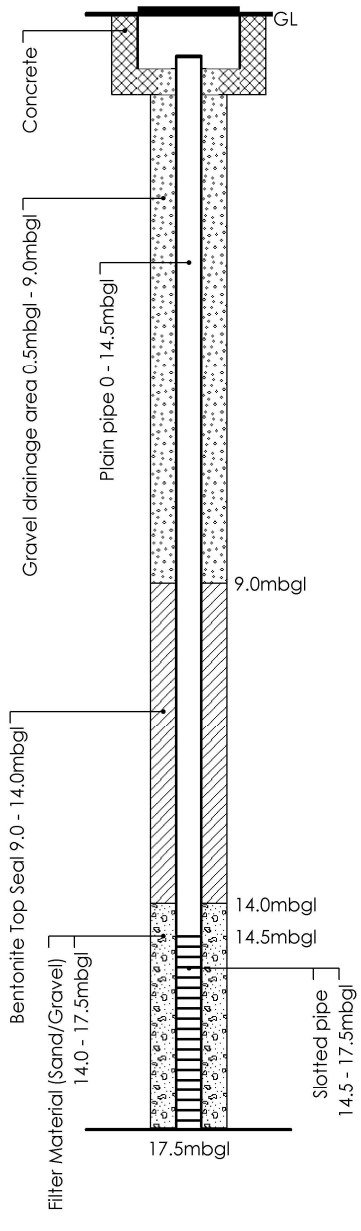
Site: Ballyburn Pit, Co. Carlow **Date finished:** 24/05/2023 **Northing:** 180856.45

Client: Malone O'Regan Environmental Sevices **Elevation:** 71.63mOD

SUBSURFACE PROFILE

Depth	Description	Depth/Elev.	Water Level	Comments
0	**Ground Surface**	71.6		
	Firm brown sandy TOPSOIL	0.0		
	Loose reddish brown slightly gravelly SAND	69.9		
	Desne brown SAND AND GRAVEL with very frequent cobbles and boulders	1.7 66.1		
	Firm brown sandy SILT	5.5 63.0		
10	Firm brown very sandy gravelly SILT with occasional sandy gravelly layers	8.6 57.8		Very slow water inflow at 11mbgl
	Weak weathered brown GRANITE	13.8 56.1		Slow water inflow at 14mbgl
	Medium strong brown GRANITE	15.5 54.1		
		17.5		

Well Completion Details



Remarks:

Drilling Contractor: Stephan Petersen

Drilling type: **Scale as shown**

Logged by: JL **Sheet:** 1 of 1

Drilling Log

Well No.: 23GW103

Project No: P1643-0

Date started: 22/05/2023

Easting: 276584.08

Site: Ballyburn Pit, Co. Carlow

Date finished: 22/05/2023

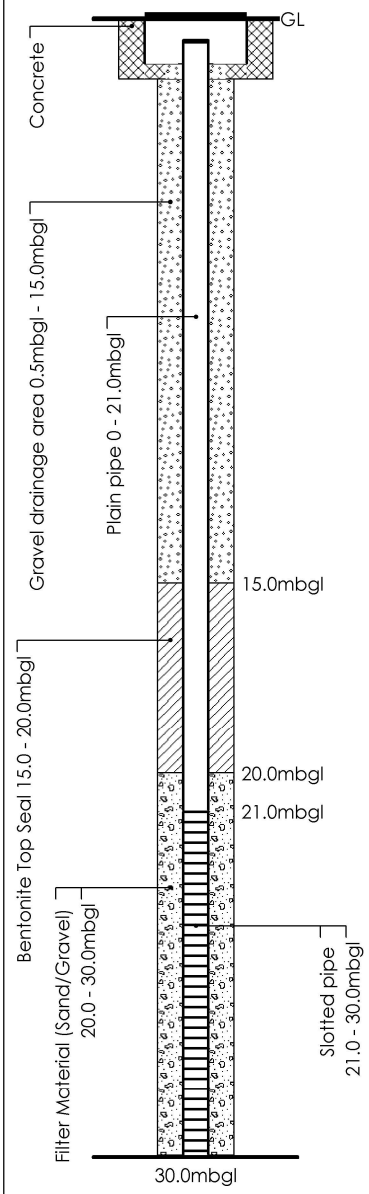
Northing: 181476.87

Client: Malone O'Regan Environmental Sevices

Elevation: 78.17mOD

SUBSURFACE PROFILE

Depth	Symbol	Description	Depth/Elev.	Water Level	Comments
0		**Ground Surface**	78.2		
		Medium dense medium coarse brown gravelly SAND with frequent cobbles and boulders	0.0 76.0		
		Loose to Medium dense brown SAND	2.2		
			69.6		
10		Firm brown sandy SILT	8.6		
			65.9		
		Dense brown very silty slightly clayey SAND AND GRAVEL with occasional cobbles and boulders	12.3		Slow water inflow at 14mbgl
			59.7		
20		Weak weathered brown GRANITE	18.5		
		Medium strong brown GRANITE			
		Strong brown GRANITE			Very slow water inflow at 27.5mbgl
30			48.2		
			30.0		



Remarks:

Drilling Contractor: Stephan Petersen

Drilling type:

Scale as shown

Logged by: JL

Sheet: 1 of 1

HYDRO-ENVIRONMENTAL SERVICES 22 Lower Main Street Dungarvan Co. Waterford Tel: 058-44122 Email: info@hydroenvironmental.ie

Drilling Log

Well No.: 23GW104

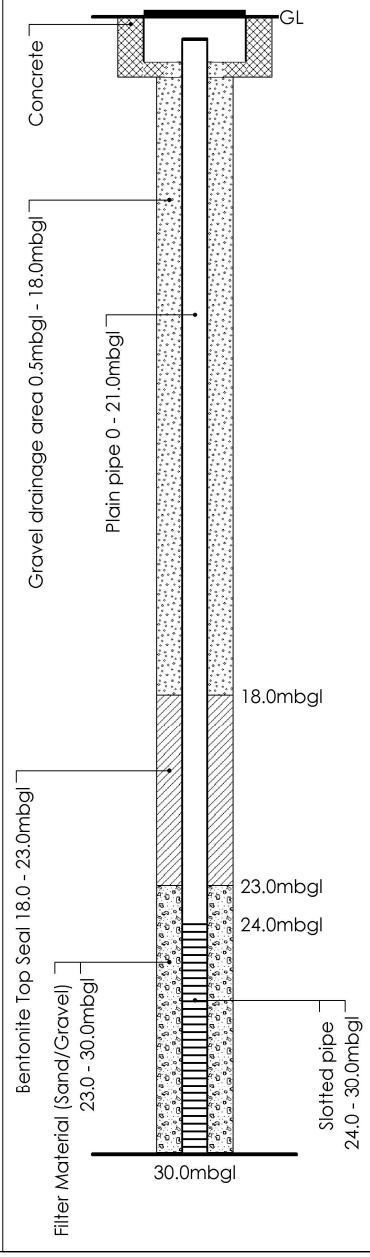
Project No: P1643-0 **Date started:** 23/05/2023 **Easting:** 277010.65

Site: Ballyburn Pit, Co. Carlow **Date finished:** 23/05/2023 **Northing:** 180772.96

Client: Malone O'Regan Environmental Sevices **Elevation:** 75.23mOD

SUBSURFACE PROFILE

Depth	Description	Depth/Elev.	Water Level	Comments
	Ground Surface	75.2		
0	Firm sandy TOPSOIL	0.0		
	Loose reddish brown sub-rounded SAND AND GRAVEL with occasional cobbles and boulders	73.0 / 2.2	▼	Slow water inflow at 2mbgl
	Medium dense coarse greyish brown gravelly SAND	66.1		
10	Soft becoming Firm brown sandy SILT	9.1 / 62.2		
	Firm to stiff brown sandy gravelly SILT	13.0 / 59.1		
	Firm to stiff brown silty sandy gravelly CLAY	16.1 / 53.4		
20	Medium strong brownish weathered GRANITE	21.8	▼	Medium water inflow at 27.5mbgl
	Medium strong brown GRANITE with occasional weathered layers			
30		45.2 / 30.0		



Remarks:

Drilling Contractor: Stephan Petersen

Drilling type: **Scale as shown**

Logged by: JL **Sheet:** 1 of 1

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RECEIVED: 17/12/2024

APPENDIX 8

APPENDIX 8-1

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WATER FRAMEWORK DIRECTIVE ASSESSMENT
BALLYBURN SAND AND GRAVEL PIT EXTENSION, BALLYBURN UPPER, CO. KILDARE

FINAL REPORT

Prepared for:

DAN MORRISEY & CO. (PLAZAMOUNT LTD)

Prepared by:

HYDRO-ENVIRONMENTAL SERVICES

DOCUMENT INFORMATION

Document Title:	**WATER FRAMEWORK DIRECTIVE ASSESSMENT BALLYBURN SAND & GRAVEL PIT EXTENSION, BALLYBURN UPPER, CO. KILDARE**
Issue Date:	**12th November 2024**
Project Number:	**P1643-0**
Project Reporting History:	**P1643-0_WFD_DRAFT_D0** **P1643-0_WFD_FINAL_F0** **P1643-0_WFD_FINAL_F1**
Current Revision No:	**P1643-0_WFD_FINAL_F2**
Author:	**MICHAEL GILL** **CONOR MCGETTIGAN** **NITESH DALAL**
Signed:	 **Michael Gill B.A., B.A.I., M.Sc., MIEI** **Managing Director – Hydro-Environmental Services**

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FIGURES (IN TEXT)

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1. INTRODUCTION

1.1 BACKGROUND

Hydro-Environmental Services (HES) were requested by Malone O'Regan Environmental Services ('MOR Environmental'), on behalf of Dan Morrisey & Co. (Plazamount Ltd), to complete a Water Framework Directive (WFD) Compliance Assessment for a proposed sand and gravel pit extension at and restoration at Ballyburn Upper, Gorteenvacan, Knockbane Castledermot, Co Kildare (the Proposed Development).

The purpose of this WFD Assessment is to determine if any specific components or activities associated with the Proposed Development will compromise WFD objectives or cause a deterioration in the status of any surface water or groundwater body and/or jeopardise the attainment of good surface water or groundwater status. This assessment will determine the water bodies with the potential to be impacted, describe the proposed mitigation measures if such water bodies are identified and define any residual potential impacts.

This WFD Assessment is intended to supplement the EIAR submitted as part of the sand and gravel pit expansion planning application.

1.2 STATEMENT OF AUTHORITY

Hydro-Environmental Services (HES) are a specialist geological, hydrological, hydrogeological and environmental practice that delivers a range of water and environmental management consultancy services to the private and public sectors across Ireland and Northern Ireland. HES was established in 2005, and our office is located in Dungarvan, County Waterford. We routinely complete impact assessments for hydrology and hydrogeology for a large variety of project types including quarries.

This WFD assessment was prepared by Michael Gill, Conor McGettigan and Nitesh Dalal.

Michael Gill (P. Geo., B.A.I., MSc, Dip. Geol., MIEI) is an Environmental Engineer with over 22 years' environmental consultancy experience in Ireland. 22 years' environmental consultancy experience in Ireland. Michael has a degree in Civil and Environmental Engineering, a MSc in Engineering hydrology from TCD and a MSc in Applied Hydrogeology from Newcastle University. Michael has completed numerous (60+) hydrological and hydrogeological assessments relating to bedrock quarries and sand and gravel pits. Recent examples include Ardfert quarry in County Kerry and Middleton Quarry in County Cork.

Conor McGettigan (BSc, MSc) is an Environmental Scientist with over 4 years' experience in environmental consultancy in Ireland. Conor holds an M.Sc. in Applied Environmental Science (2020) and a B.Sc. in Geology (2016) from University College Dublin. Conor has prepared the Land, Soils and Geology and Hydrology and Hydrogeology Chapters for numerous quarries and sand and gravel EIAR projects. Conor routinely competes WFD Assessments for a wide variety of projects including wind farms, quarries and sand and gravel pits.

Nitesh Dalal (B.Tech, PG Dip., MSc) is an Environmental Scientist Intern with over 7 years' experience in environmental consultancy and environmental management in India. Nitesh is pursuing an M.Sc. in Environmental Science (2024) and holds a PG Diploma in Health, Safety and Environment from Annamalai University, India (2021) and B.Tech. in Environmental Engineering (2016) from Guru Gobind Singh Indraprastha University, India (2016).

1.3 WATER FRAMEWORK DIRECTIVE

The EU Water Framework Directive (2000/60/EC), as amended by Directives 2008/105/EC, 2013/39/EU and 2014/101/EU ("**WFD**"), was established to ensure the protection of the water

environment. The Directive was transposed in Ireland by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003).

The WFD requires that all member states protect and improve water quality in all waters, with the aim of achieving good status by 2027 at the latest. Any new development must ensure that this fundamental requirement of the WFD is not compromised.

The WFD is implemented through the River Basin Management Plans (RBMP) which comprises a six-yearly cycle of planning, action and review. RBMPs include identifying river basin districts, water bodies, protected areas and any pressures or risks, monitoring and setting environmental objectives. In Ireland the first RBMP covered the period from 2010 to 2015 with the second cycle plan covering the period from 2018 to 2021.

The Water Action Plan 2024 is Ireland's 3rd River Basin Management Plan (2022 - 2027). The objectives of the Water Action Plan 2024 have been integrated into the design of the Project and include:

- Ensure full compliance with relevant EU legislation;
- Prevent deterioration and maintain a 'high' status where it already exists;
- Protect, enhance and restore all waters with aim to achieve at least good status by 2027; and,
- Ensure waters in protected areas meet requirements;
- Implement targeted actions and pilot schemes in focused sub-catchments aimed at (1) targeting water bodies close to meeting their objectives and (2) addressing more complex issues that will build knowledge for the third cycle.

Our understanding of these objectives is that water bodies, regardless of whether they have 'Poor' or 'High' status, should be treated the same in terms of the level of protection and mitigation measures employed.

2. WATERBODY IDENTIFICTION AND CLASSIFICATION

2.1 INTRODUCTION

This section identifies those Surface Waterbodies (SWBs), Groundwater Bodies (GWBs) and protected areas with potential to be affected by the Proposed Development and reviews any available WFD information.

2.2 SURFACE WATERBODY IDENTIFICATION

The Site is located within the Barrow surface water catchment (Hydrometric Area 14) of the South Eastern River Basin District (SERBD).

On a more local scale the Site is located in the Lerr River sub-catchment (Lerr_SC_010). Within the Lerr River sub-catchment the Site is mapped within 2 no. WFD river sub-basins, the Lerr_030 sub-basin in the north where the existing sand and gravel pit lies and the Palatine Stream_010 river sub-basin towards the south where the majority of the extension works are proposed.

A tributary of the Palatine Stream, referred to by the EPA as the Barnhill East stream (EPA Code: 14B69) flows to the south near the eastern Site boundary and feeds into the Palatine stream ~500m south of the Site. The Barnhill East stream forms part of the Palatine Stream_010 SWB.

The Palatine_010 SWB flows in a north westerly direction to the west of the Site and discharges into the River Lerr (Lerr_030 SWB). The River Lerr continues to the west before the Lerr_040 SWB discharges into the River Barrow (Barrow_160 SWB) ~5km west of the Site.

There is no direct hydraulic connection from the Site to any of the locally mapped watercourses.

Figure A below presents a local hydrology map and identifies the surface waterbodies downstream of the Site.

Table A presents the catchment area of each waterbody downstream of the Site. The catchment area for the waterbodies increases progressively downstream as more tributaries discharge into the Lerr and Barrow rivers. Therefore, those waterbodies which are in close proximity to the Site are more susceptible to water quality impacts as a result of activities associated with the Proposed Development. The potential for the Proposed Development to impact a waterbody decreases further downstream due to the increasing catchment area to the surface waterbody and resulting increase in flow volumes.

Table A: Catchment Area of Surface Waterbodies Downstream of the Site

WFD River Sub-Basin	Total Catchment Area (km²)
Palatine Stream_010	~21
Lerr_030	~104
Lerr_040	~112
Barrow_160	~2,255
Barrow_170	~2,314
Barrow_180	~2,373
Barrow_190	~2,407
Barrow_200	~2,420
Barrow_210	~2,523
Barrow_220	~2,605
Barrow_230	~2,778
Barrow_240	~2,812

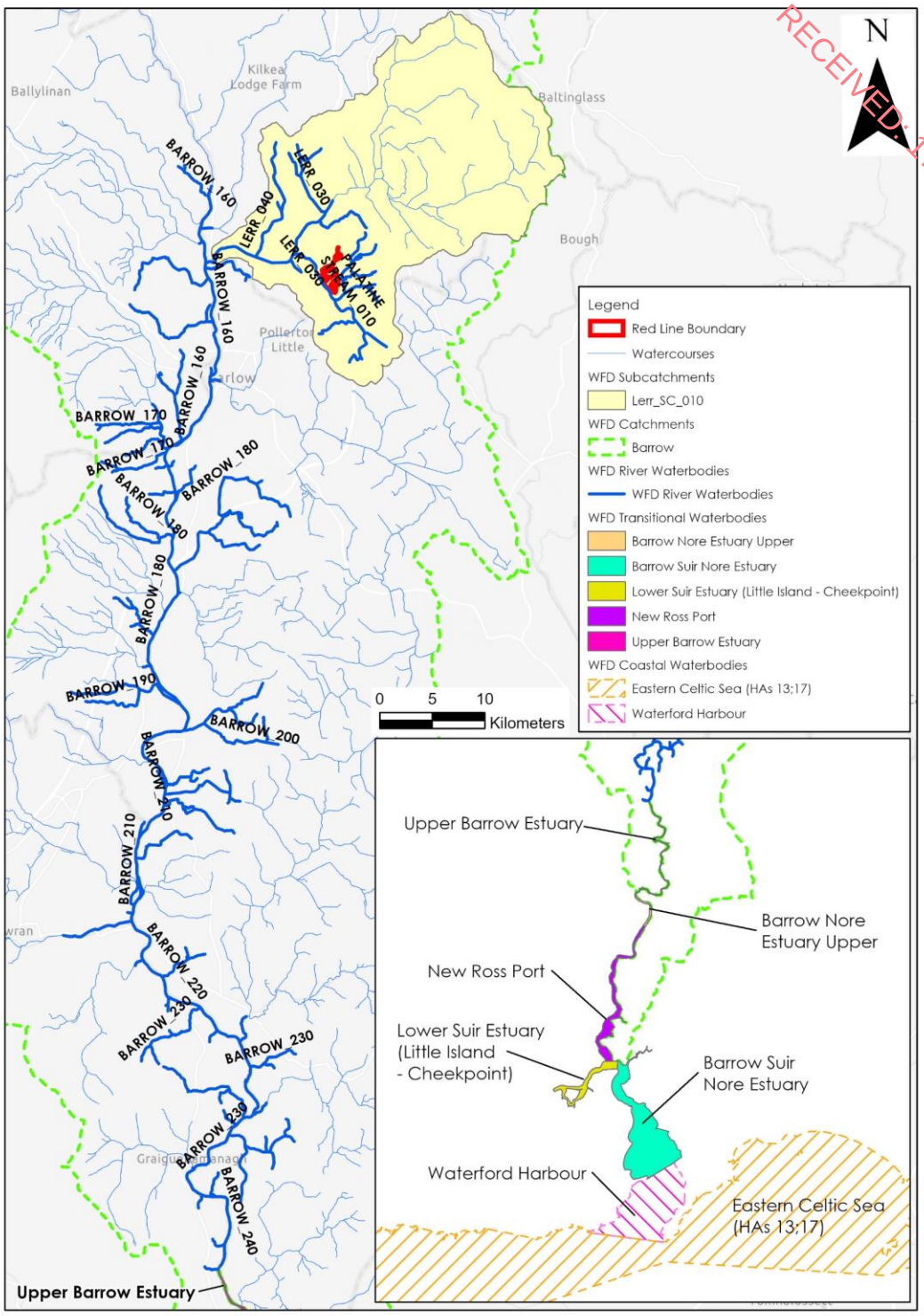

Figure A: Local Hydrology Map

2.3 SURFACE WATER BODY CLASSIFICATION

A summary of the WFD status and risk result for Surface Water Bodies (SWBs) downstream of the Site are shown in **Table B**. The overall status of SWBs is based on the ecological, chemical and quantitative status of each SWB.

Local SWB status information is available from (www.catchments.ie).

The Palatine Stream_010 SWB in the vicinity of the Site, achieved "Moderate" status in all 3 no. WFD cycles (2010-2015, 2013-2018 & 2016-2021). The Lerr River (Lerr_030 and Lerr_040 SWBs) deteriorated from "Moderate" status in the 2nd WFD cycle (2013-2018) to having "Poor" status in the latest WFD cycle (2016-2021). The Palatine Stream_010, Lerr_030 and Lerr_040 river waterbodies are all deemed to be "at risk" of failing to meet their WFD objectives in the future. Agriculture and hydromorphology are identified as the significant pressures on each of these SWBs.

Further downstream the Barrow River downstream is predominantly of "Moderate" status (Barrow_160, _170, _180, _190, _200, _220 and _240 SWBs). However, the Barrow_210 and Barrow_230 SWBs achieved "Poor" status. The majority of the SWBs along the Barrow downstream of the Site are deemed to be "at risk" of failing to meet their respective WFD objectives. These 'at risk' SWBs include the Barrow_160, _170, _180, _200, _210, _220 and the Barrow_230 SWBs. The most common significant pressures identified within the Barrow River are hydromorphology, agriculture and urban run-off.

The Barrow_190 and Barrow_240 SWBs are both under review regarding their risk status.

Each of the transitional waterbodies downstream of the Barrow River achieved "Moderate" status (Upper Barrow Estuary, Barrow Nore Estuary Upper, New Ross Port, Lower Suir Estuary (Little Island - Cheekpoint) & Barrow Suir Nore Estuary). Further out to sea is the Waterford Harbour coastal water body and the Eastern Celtic Sea (HAs 13;17) coastal waterbody which achieved "Moderate" and "High" status respectively.

All transitional waterbodies, as mentioned above are found to be "at risk". Significant pressures are yet to be identified for the Upper Barrow Estuary, whilst agricultural activities are noted as a significant pressure on all others. Urban run-off is additionally listed as a significant pressure acting on the Barrow Nore Estuary Upper transitional waterbody.

The Waterford Harbour coastal waterbody is "at risk" with agriculture and urban run-off noted as the significant pressures impacting the waterbody. The Eastern Celtic Sea (HAs 13;17) coastal waterbody, however, is "not at risk".

The surface water status for the 2016-2021 WFD cycle are shown on **Figure B.**

Table B: Summary WFD Information for Surface Water Bodies

SWB	Overall Status (2010-2015)	Overall Status (2013-2018)	Overall Status (2016-2021)	Risk Status (3rd Cycle)	3rd Cycle Pressures
Barrow Catchment					
Palatine Stream_010	Moderate	Moderate	Moderate	At risk	Agriculture & hydromorphology
Lerr_030	Moderate	Moderate	Poor	At risk	Agriculture & hydromorphology
Lerr_040	Moderate	Moderate	Poor	At risk	Agriculture & hydromorphology
Barrow_160	Moderate	Moderate	Moderate	At risk	Hydromorphology & urban run-off
Barrow_170	Moderate	Moderate	Moderate	At risk	Agriculture & hydromorphology
Barrow_180	Moderate	Moderate	Moderate	At risk	Agriculture & urban run-off
Barrow_190	Unassigned	Unassigned	Moderate	Under review	None
Barrow_200	Good	Good	Moderate	At risk	Not identified as of yet
Barrow_210	Poor	Poor	Poor	At risk	Hydromorphology, industry & urban run-off
Barrow_220	Moderate	Moderate	Moderate	At risk	Agriculture
Barrow_230	Poor	Poor	Poor	At risk	Hydromorphology & other
Barrow_240	Unassigned	Moderate	Moderate	Under review	None
Upper Barrow Estuary	Good	Good	Moderate	At risk	Not identified as of yet
Barrow Nore Estuary Upper	Good	Moderate	Moderate	At risk	Agriculture & urban run-off
New Ross Port	Moderate	Moderate	Moderate	At risk	Agriculture
Lower Suir Estuary (Little Island - Cheekpoint)	Moderate	Good	Moderate	At risk	Agriculture
Barrow Suir Nore Estuary	Good	Moderate	Moderate	At risk	Agriculture
Waterford Harbour	Good	Moderate	Moderate	At risk	Agriculture & urban run-off
Eastern Celtic Sea (HAs 13;17)	Unassigned	Good	High	Not at risk	None

2.4 GROUNDWATER BODY IDENTIFICATION

The Site overlies the New Ross (IE_SE_G_152) Groundwater Body (GWB).

Based on the GSI bedrock map (www.gsi.ie) the Site is located on the western edge of the exposed Leinster granites. The bedrock mapped at the Site is classified by the GSI as Locally Important Aquifer (LI)- Bedrock which is Moderately Productive only in Local Zones.

According to the New Ross GWB Characterization Report (GSI, 2004) there are two distinct types of lithologies in this GWB; limestones and granites. The flow of groundwater in both types will be limited to the upper weathered layer in the rock and its orientation and nature dominated by the fracturing of the rock on a local scale.

2.5 GROUNDWATER BODY CLASSIFICATION

The New Ross GWB achieved "Good" status in all 3 no. WFD cycles (2010-2015, 2013-2018, 2016 – 2021). This GWB is currently under review with regard to its risk status (refer to **Table C**). No significant pressures have been identified for this GWB.

The GWB status for the 2016-2021 WFD cycle are shown on **Figure B**.

Table C: Summary WFD Information for Groundwater Bodies

GWB	Overall Status (2010-2015)	Overall Status (2013-2018)	Overall Status (2016-2021)	Risk Status (3rd Cycle)	Pressures
New Ross	Good	Good	Good	Under review	None

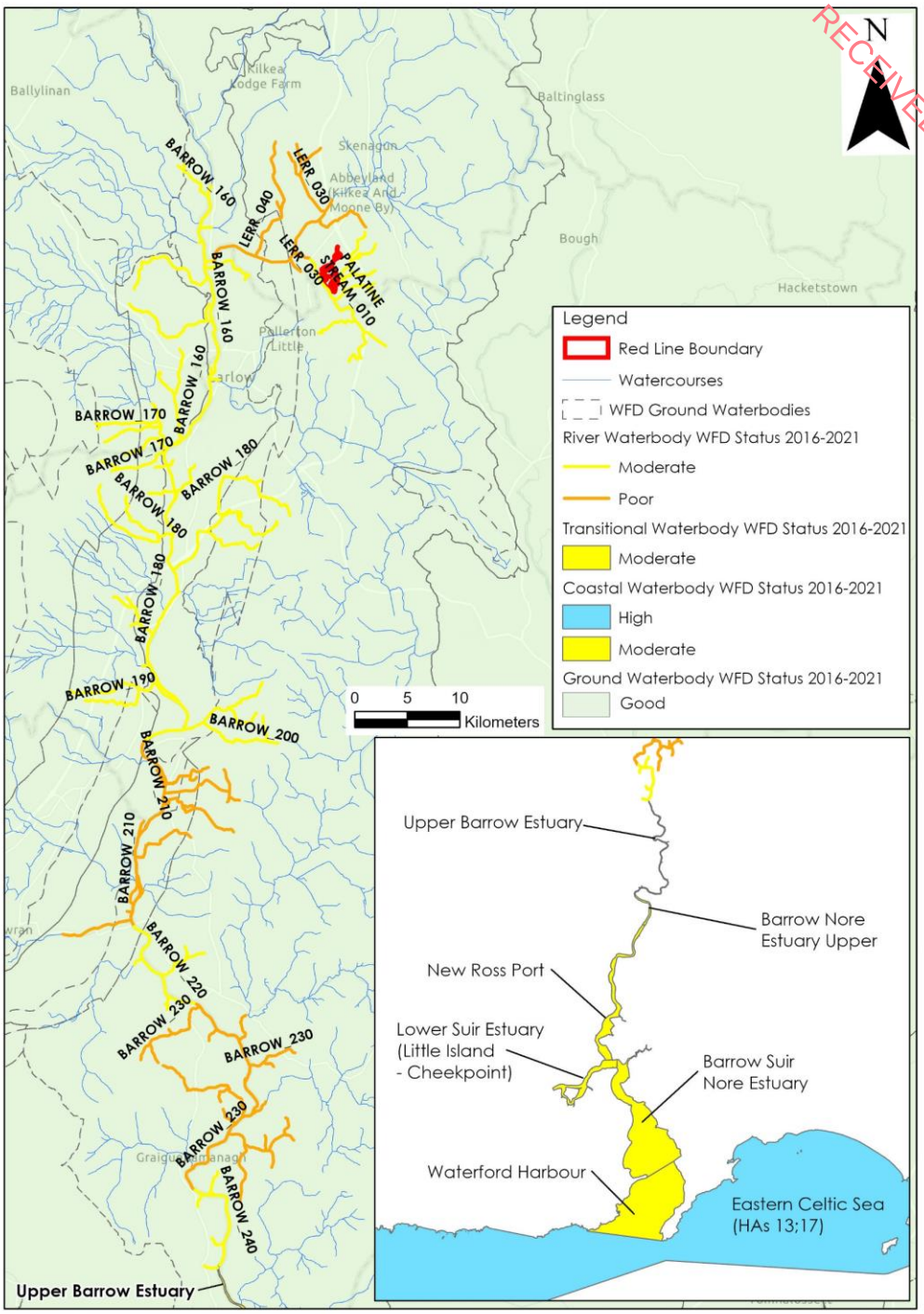

Figure B: WFD Groundwater & Surface Water Status (2016-2021)

2.6 PROTECTED AREAS IDENTIFICATION

2.6.1 Nature Conservation Designations

Proposed Natural Heritage Areas (pNHAs), Special Areas of Conservation (SACs), candidate Special Areas of Conservation (cSAC) and Special Protection Areas (SPAs).

Ramsar Sites are wetlands of international importance designated under the Ramsar Convention (adopted in 1971 and came into force in 1975), providing a framework for the conservation and wise use of wetlands and their resources.

The closest designated site is the River Barrow And River Nore SAC (Site Code: 002162) located ca. 1.3km northwest of the Site along the Lerr River.

The Oakpark pNHA (Site Code: 000810) is ca. 2.9km west of the Site.

There are no other designated Sites within a 5km radius of the Site.

2.6.2 Bathing Waters

Bathing waters are those designated under the Bathing Water Directive (76/160/EEC) or the later revised Bathing Water Directive (2006/7/EC).

There are no designated bathing waters in the vicinity of the Site.

2.6.3 Nutrient Sensitive Areas

Nutrient Sensitive Areas (NSA) comprise Nitrate Vulnerable Zones and polluted waters designated under the Nitrates Directive (91/676/EEC) and areas designated as sensitive areas under the Urban Wastewater Treatment Directive (UWWTD)(91/271/EEC). Sensitive areas under the UWWTD are water bodies affected by eutrophication associated with elevated nitrate concentrations and act as an indication that action is required to prevent further pollution caused by nutrients.

The EPA carried out a review of NSAs downstream of large urban wastewater discharges in 2020. Once the regulations are in place, and nutrient sensitive areas have been identified, additional nutrient removal must be applied (if not already applied) to wastewater treatment plants discharging to the sensitive area. If this treatment was in place the objective was deemed to have been met.

There are 4 no. NSAs located along the Barrow River, downstream of the Site and include the following:

- Barrow River (Barrow_140 to _160 SWBs) associated with the Athy urban wastewater agglomeration.
- Barrow River (Barrow_160 to _180 SWBs) associated with the Carlow urban wastewater agglomeration.
- Barrow River (Barrow_190 to _240 SWBs) associated with the Muinebheag and Leighlinbridge urban wastewater agglomerations.
- Upper Barrow Estuary associated with the Muinebheag and Leighlinbridge urban wastewater agglomerations.

NSA objectives are being met in all 4 no. NSAs.

2.6.4 Shellfish Areas

The Shellfish Waters Directive (2006/113/EC) aims to protect or improve shellfish waters in order to support shellfish life and growth.

There are no designated shellfish protected areas in the vicinity of the Site. The closest designated shellfish protected area is the Waterford Harbour (Cheekpoint/Arthurstown/Creadan) (IE_SE_100_0100) shellfish area, ~70km downstream from the Site.

2.6.5 Drinking Water

There are no Drinking Water Protected Area's (DWPA) in the vicinity or downstream of the Site.

The nearest DWPA is the Burren_060 DWPA located ca. 2.3km southwest of the Site, mapped within the Barrow_SC_090 sub-catchment.

3. WFD SCREENING

As discussed in **Section 2**, there are a total of 12 no. river water bodies that are located in the vicinity or downstream of the Site. In addition, there are 5 no. transitional waterbodies and 2 no. coastal waterbodies located downstream. Furthermore, the Site is underlain by 1 no. GWB. The River Barrow And River Nore SAC is located 1km northwest of the Site along the Lerr River.

3.1 SURFACE WATER BODIES

There are 19 no. SWBs located in the vicinity or downstream of the Site.

Due to the nature of the Proposed Development, *i.e.* extension of a sand and gravel pit (as described in **Section 4.1**), the potential for surface water quality effects will be minimal. During the operational phase there will be no discharge to surface waters and the bowl-shaped nature of the Site will eliminate the potential for direct pathways to exist between the Proposed Development and downstream SWBs. However, there is the potential for some minor surface water quality effects to arise during the construction phase while soils and subsoils are being removed from the proposed extraction areas. Therefore, the Palatine Stream_010 and Lerr_030 SWBs are carried through into the WFD Compliance Assessment. These SWBs have been screened in as the Site and the proposed works are located within their respective river sub-basins, and the close proximity of mapped watercourses to the Site. The Lerr_140 SWB has also be included in the WFD Compliance Assessment due to its location directly downstream of the Lerr_030 SWB. The Proposed Development must not in any way result in a deterioration in the status of these SWBs and/or prevent them from meeting the biological and chemical characteristics for good status in the future.

All other downstream SWBs (Barrow_160 through to Barrow_240 SWBs) have been screened out due to the nature of the Proposed Development and the lack of direct drainage pathways between the Site and the nearby watercourses (Palatine Stream_010 and Lerr_030 SWBs), prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. Furthermore, the increasing flow volumes in the River Barrow significantly reduce the potential for any effects. The Proposed Development has no potential to impact the status of these SWBs.

Transitional waterbodies including the Upper Barrow Estuary, Barrow Nore Estuary Upper, New Ross Port, Lower Suir Estuary (Little Island - Cheekpoint) and the Barrow Suir Nore Estuary have been screened out also due to their distant location from the Site, the large volumes of water within these SWBs and the saline nature of these waters. Similarly, the Waterford harbour coastal waterbody and the Eastern Celtic Sea (HAs 13;17) coastal waterbody have been screened out for the same reasoning. The Proposed Development has no potential to cause a deterioration in status of these SWBs and/or jeopardise the attainment of good surface water status in the future.

3.2 GROUNDWATER BODIES

With respect to GWBs, the New Ross GWB has been screened in due to its location directly underlying the Site. The Proposed Development works must not in any way result in a deterioration in the status of this GWB and/or prevent it from meeting the characteristics required for good status in the future.

The Proposed Development will involve the extraction of material down to 71m OD which will increase the groundwater vulnerability of the underlying aquifer which is currently rated as "High" based on the site hydrogeological conditions.

3.3 PROTECTED AREAS

The closest designated site is the River Barrow And River Nore SAC, located ca. 1km to the northwest of the Site. This SAC is carried through into the WFD Compliance Assessment due to its proximal location to the Site. The Proposed Development works must not in any way impact this SAC.

The Oakpark pNHA is located ca. 2.9km west of the Site and within a different sub-catchment (Barrow_SC_090). Impacts on the pNHA can be discounted given the lack of potential hydrological pathways and the distance separating the designated site from the Proposed Development. Therefore, there is no potential for the Proposed Development to impact this pNHA.

The NSA's downstream of the Site along the Barrow River, (Barrow River (Barrow_140 to _160 SWBs, Barrow_160 to _180 SWBs, Barrow_190 to _240 SWBs and the Upper Barrow Estuary) have all been screened out due to the nature of the Proposed Development (sand and gravel pit operating above the water table) and as there are no direct drainage pathways between the Site and the Barrow River.

The shellfish area of Waterford Harbour (Cheekpoint/Arthurstown/Creadan) is located ~70km south of the Site and lies within the Lower Suir Estuary and the Barrow Suir Nore Estuary transitional waterbodies. The shellfish area has been screened out due to its distant location from the Site. The Proposed Development has no potential to cause a deterioration in status of this protected area.

The Burren_060 DWPA has been screened out of the assessment as it has no hydrological linkage to the Site and is located within a different sub-catchment (Barrow_SC_090).

3.4 WFD SCREENING SUMMARY

A summary of WFD Screening discussed above is shown in **Table D**.

Table D: Screening of WFD water bodies located within the study area

Type	WFD Classification	Waterbody Name/ID	Inclusion in Assessment	Justification
Surface Water Body	River	Palatine Stream_010	**Yes**	The extension works within the sand & gravel pit are situated within the Palatine Stream_010 river sub-basin. Therefore, an assessment is required to consider the potential impacts of the Proposed Development on this SWB.
	River	Lerr_030	**Yes**	The northern portion of the existing sand & gravel pit is situated within the Lerr_030 river sub-basin. Therefore, an assessment is required to consider the potential impacts of the Proposed Development on this SWB.
	River	Lerr_040	**Yes**	The Lerr_040 SWB has been included in the assessment as it lies directly downstream of the Lerr_030 SWB. An assessment is required to consider the potential impacts of the Proposed Development on this SWB.
	River	Barrow_160	No	The Barrow_160 SWB has been screened out due to the large volume of water within this SWB and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the status of this SWB.
	River	Barrow_170	No	The Barrow_170 SWB has been screened out due to the large volume of water within this SWB and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the status of this SWB.
	River	Barrow_180	No	The Barrow_180 SWB has been screened out due to the large volume of water within this SWB and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the status of this SWB.
	River	Barrow_190	No	The Barrow_190 SWB has been screened out due to the large volume of water within this SWB and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the status of this SWB.
	River	Barrow_200	No	The Barrow_200 SWB has been screened out due to the large volume of water within this SWB and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the status of this SWB.
	River	Barrow_210	No	The Barrow_210 SWB has been screened out due to the large volume of water

				within the river and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. this SWB and the lack of direct drainage pathways between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the status of this SWB.
	River	Barrow_220	No	The Barrow_220 SWB has been screened out due to the large volume of water within the river and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. this SWB and the lack of direct drainage pathways between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the status of this SWB.
	River	Barrow_230	No	The Barrow_230 SWB has been screened out due to the large volume of water within the river and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. this SWB and the lack of direct drainage pathways between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the status of this SWB.
	River	Barrow_240	No	The Barrow_240 SWB has been screened out due to the large volume of water within this SWB and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the status of this SWB.
	Transitional	Upper Barrow Estuary	No	The Upper Barrow Estuary transitional waterbody has been screened out due to its distant location from the Site, the large volume of water within the estuary and the saline nature of these waters. The Proposed Development has no potential to affect the status of this SWB.
	Transitional	Barrow Nore Estuary Upper	No	The Barrow Nore Estuary Upper transitional waterbody has been screened out due to its distant location from the Site, the large volume of water within the estuary and the saline nature of these waters. The Proposed Development has no potential to affect the status of this SWB.
	Transitional	New Ross Port	No	The New Ross Port transitional waterbody has been screened out due to its distant location from the Site, the large volume of water within the estuary and the saline nature of these waters. The Proposed Development has no potential to affect the status of this SWB.

	Transitional	Lower Suir Estuary (Little Island - Cheekpoint)	No	The Lower Suir Estuary (Little Island - Cheekpoint) has been screened out due to its distant location from the Site, the large volume of water within the estuary and the saline nature of these waters. The Proposed Development has no potential to affect the status of this SWB.
	Transitional	Barrow Suir Nore Estuary	No	The Barrow Suir Nore Estuary has been screened out due to its distant location from the Site, the large volume of water within the estuary and the saline nature of these waters. The Proposed Development has no potential to affect the status of this SWB.
	Coastal	Waterford Harbour	No	The Waterford Harbour coastal waterbody has been screened out due to its distant location from the Site, the large volume of water within the estuary and the saline nature of these waters. The Proposed Development has no potential to affect the status of this SWB.
	Coastal	Eastern Celtic Sea (HAs 13;17)	No	The Eastern Celtic Sea (HAs 13;17) coastal waterbody has been screened out due to its distant location from the Site, the large volume of water within the estuary and the saline nature of these waters. The Proposed Development has no potential to affect the status of this SWB.
Ground water Body	Groundwater	New Ross GWB	**Yes**	The Site overlies the New Ross GWB. An assessment is required to consider potential impacts of the Proposed Development on this GWB.
Protected Areas	Nature Conservation Designations	River Barrow And River Nore SAC	**Yes**	The River Barrow And River Nore SAC is located ca. 1km northwest of the Proposed Development along the Lerr_030 SWB. Therefore, an assessment is required to consider the potential impacts of the Proposed Development on this SAC.
		Oakpark pNHA	No	Impacts on the Oakpark pNHA can be discounted given the lack of flow pathways and the distance separating the Site from the pNHA. The Proposed Development has no potential to affect the status of this SWB.
	Nutrient Sensitive Areas	Barrow River (_140 -_160)	No	The Barrow River (Barrow_140 to _160 SWBs) NSA has been screened out due to the large volume of water within the Barrow River and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the status of this NSA.
		Barrow River (_160 - _180)	No	The Barrow River (Barrow_160 to _180 SWBs) NSA has been screened out due to the large volume of water within the Barrow River and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the status of this NSA.
		Barrow River (_190 - _240)	No	The Barrow River (Barrow_190 to_240 SWBs) NSA has been screened out due to the large volume of water within the Barrow River and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the

				status of this SWB.
		Upper Barrow Estuary	No	The Upper Barrow Estuary NSA has been screened out due to the large volume of water within the Barrow River and the lack of any direct hydrological connection between the Site and the Lerr River, prohibiting the potential for surface water quality effects to extend any significant distance downstream of the Site. The Proposed Development has no potential to affect the status of this SWB.
	Shellfish Waters	Waterford Harbour (Cheekpoint/Arthurstown/Creadan)	No	The Waterford Harbour (Cheekpoint/Arthurstown/Creadan) shellfish waters have been screened out due to its distant location from the Site. The Proposed Development has no potential to impact these Shellfish Waters.
	Drinking Water Protected Areas	Burren_060 DWPA	No	The Burren_060 DWPA has been screened out of the assessment as it has no hydrological linkage to the Site. The Proposed Development has no potential to impact this DWPA.

4. WFD COMPLIANCE ASSESSMENT

4.1 DEVELOPMENT PROPOSALS

The Proposed Development will consist of the following components:

- The continuance of use of existing site infrastructure, including all processing equipment, machinery, entrance, office/welfare facilities, carpark, wheel wash, weighbridge, haul routes and other ancillary infrastructure;
- The extension of the Site to known quality reserves in the south (ca. 28.3ha). The extraction of this extension area will result in a pit floor at ca. 71m OD, which is above the winter water table. The applicant intends to extract ca. 1.7million m^3 of aggregates or ca. 3,060,000t over the lifetime of the project; and,
- The importation of 1,125,000t of clean, uncontaminated soil and stone by-product materials to complement overburden originating from the Site during the restoration process (which will be restored to between 73/74m OD).

This application site will cover an area of ca. 37.8ha. within an overall landholding of 72.7ha (including the extant permission). Planning permission is being sought for 15 years (up to 6 months for the construction phase, 14 years for the operational phase and 6 months for the restoration phase).

There is no proposed water discharge from the Site during the Proposed Development.

4.2 POTENTIAL EFFECTS

4.2.1 Construction Phase (Unmitigated)

4.2.1.1 Potential Surface Water Quality/ Quantity Effects

Construction phase activities including removal of soil and overburden from the proposed extraction areas will require earthworks resulting in removal of vegetation cover and excavation of soil and subsoils. The main risk will be from surface water runoff from bare soil and stockpiles during construction works.

Hydrocarbons will also be used during the construction phase. Accidental spillage during refuelling of construction plant with petroleum hydrocarbons is a significant pollution risk to surface waters at all construction Sites. The accumulation of small spills of fuels and lubricants during routine plant use can also be a pollution risk. Hydrocarbon has a high toxicity to humans, and all flora and fauna, including fish, and is persistent in the environment. It is also a nutrient supply for adapted micro-organisms, which can rapidly deplete dissolved oxygen in waters, resulting in the death of aquatic organisms.

Construction phase activities can result in the release of suspended solids and pollutants in runoff water and could result in an increase in the suspended sediment load, resulting in increased turbidity and contamination which in turn could affect the water quality and fish stocks of downstream watercourses.

However, there is no existing or proposed direct surface water connections between the Site and nearby surface watercourses. The only possible hydraulic connections are via small rates of surface water runoff and via vertical migration through the unsaturated zone in the gravel aquifer followed by lateral migration and discharge into nearby surface watercourses.

The potential for surface water quality effects is therefore low to negligible due to the local hydrogeological regime (high rates of groundwater recharge) and the short term-nature of the work during the construction phase.

A summary of potential status change to SWBs arising from surface water quality impacts from earthworks during the construction phase of the Proposed Development in the unmitigated scenario are outlined in in **Table E**.

Table E: Potential Surface Water Quality Effects During Construction Phase (Unmitigated)

SWB	WFD Code	Current Status	Assessed Potential Status Change
Palatine Stream_010	IE_SE_14P040200	Moderate	Moderate
Lerr_030	IE_SE_14L010250	Poor	Poor
Lerr_040	IE_SE_14L010300	Poor	Poor

4.2.1.2 Potential Groundwater Quality/Quantity Effects

Accidental spillage during refuelling of construction plant with petroleum hydrocarbons is a pollution risk to groundwater. The accumulation of small spills of fuels and lubricants during routine plant use can also be a pollution risk and have the potential to impact on groundwater quality in the underlying GWBs. All works during the construction phase will be above the groundwater table. The potential for the Proposed Development to impact the overall status of the underlying GWB is limited given the scale of the Site in comparison with the New Ross GWB (1,059km^2).

A summary of potential status change to the underlying GWBs, arising from potential groundwater quality impacts during the construction phase of the Proposed Development in the unmitigated scenario are outlined in **Table F**.

Table F: Potential Groundwater Quality / Quantity Effects During Construction Phase (Unmitigated)

GWB	WFD Code	Current Status	Assessed Potential Status Change
New Ross GWB	IE_SE_G_152	Good	Good

4.2.1.3 Potential Impacts on Protected Areas

River Barrow And River Nore SAC

The River Barrow And River Nore SAC is located ca. 1km to the northwest along the Lerr River. The River Barrow And River Nore SAC consists of the freshwater stretches of the Barrow and Nore River catchments as far upstream as the Slieve Bloom Mountains, and it also includes the tidal elements and estuary as far downstream as Creadun Head in Waterford.

The entry of contaminants to the River could potentially affect the qualifying interests of the SAC, some of which are listed below:

- [1029] Freshwater Pearl Mussel (Margaritifera margaritifera)
- [1092] White-clawed Crayfish (Austropotamobius pallipes)
- [1095] Sea Lamprey (Petromyzon marinus)
- [1096] Brook Lamprey (Lampetra planeri)
- [1099] River Lamprey (Lampetra fluviatilis)
- [1103] Twaite Shad (Alosa fallax)
- [1106] Atlantic Salmon (Salmo salar)

- [1355] Otter (Lutra lutra)
- [1421] Killarney Fern (Trichomanes speciosum)
- [1990] Nore Freshwater Pearl Mussel (Margaritifera durrovensis)

However, as outlined above, there is no existing or proposed direct surface water connections between the Site and local watercourses which feed into the River Barrow And River Nore SAC. The only possible hydraulic connections are via small rates of surface water runoff and via vertical migration through the unsaturated zone in the gravel aquifer followed by lateral migration and discharge into the Lerr River.

The risk of potential impacts on the River Barrow And River Nore SAC are low, given the lack of flow pathways, the intervening lands and the distance separating the River Barrow And River Nore SAC from the Site. Even in an unmitigated scenario there is little risk to the SAC.

4.2.2 Operational Phase (Unmitigated)

4.2.2.1 Potential Groundwater Quantity / Quality Effects

The risks to groundwater quality are the same as those described in **Section 4.2.1.2** and relate to hydrocarbons. All extraction is and will be completed as dry workings with an anticipated finished depth across the Site of 71maOD, ~2-6m above the existing water level. Therefore, all works during the operation phase of the Proposed Development will be located above the groundwater table.

No extraction below the existing permitted levels will occur. Therefore, no groundwater dewatering will be required and there is no potential for groundwater quantity effects.

A summary of potential status change to GWBs arising from potential groundwater quality impacts during the operational phase of the Proposed Development in the unmitigated scenario are outlined in **Table G**.

Table G: Potential Groundwater Quality / Quantity Effect During Operational Phase (Unmitigated)

GWB	WFD Code	Current Status	Assessed Potential Status Change
New Ross GWB	IE_SE_G_152	Good	Good

4.2.2.2 Potential Impacts on Surface Water Quality

During the operational phase, the extraction of sand and gravel at the Site will involve the removal and excavation of subsoils. The main risk will be from surface water runoff from areas of bare soil and stockpiles.

Hydrocarbons will also be used on-Site throughout the operational phase. Accidental spillage of petroleum hydrocarbons is a significant pollution risk to surface waters at all sand and gravel pit Sites.

However, due to the bowl-shaped nature of the extraction areas, no direct hydrological pathways will occur between the Site and downstream SWBs. During the operational phase there will be no discharge to surface watercourses. All surface water within the Site will either be recycled and reused on-Site (wheelwash etc.) or will infiltrate to ground. The potential to affect surface water quality is through hydraulic continuity with groundwater.

A summary of potential status change to SWBs during the operation phase of the Proposed Development in the unmitigated scenario are outlined in **Table H**.

Table H: Potential Surface Water Quality Effects During Operational Phase (Unmitigated)

SWB	WFD Code	Current Status	Assessed Potential Status Change
Palatine Stream_010	IE_SE_14P040200	Moderate	Poor
Lerr_030	IE_SE_14L010250	Poor	Poor
Lerr_040	IE_SE_14L010300	Poor	Poor

4.2.2.3 Potential Effects on Designated Sites

As per the construction phase there is little potential for effects on the River Barrow and River Nore SAC due to the lack of any existing or proposed surface water connection between the site and the local watercourses which feed into the SAC. The only potential connection is via groundwater recharge, lateral migration of groundwater and discharge of groundwater as baseflow into the Lerr River. Even in an unmitigated scenario, there is little potential for effects.

4.3 MITIGATION MEASURES

In order to mitigate against the potential negative effects on surface and groundwater quality, quantity and flow patterns, mitigation measures will be implemented during the Proposed Development. These are outlined below.

4.3.1 Construction Phase

4.3.1.1 Mitigation Earthworks (removal of Vegetation Cover) Resulting in Suspended Solids Entrainment in Surface Waters

The proposed construction elements are short term.

Prior to the commencement of earthworks, silt fencing will be placed down-gradient of the construction area. These will be embedded into the local soils to ensure all Site water is captured and filtered prior to recharge.

Daily monitoring and inspections of soil stripping will be completed. Excavated soil will be used for landscaping, screening berms, and for Site restoration.

Earthworks will take place during periods of low rainfall to reduce run-off and potential siltation of watercourses.

4.3.1.2 Mitigation for Hydrocarbons

Mitigation measures proposed to avoid release of hydrocarbons at the Site are as follows:

- Preventative maintenance and relevant maintenance logs will be kept for all on-site plant and equipment;
- Refuelling will only occur from a fuel bowser as per the existing established operation;
- A spill kit will be kept nearby when refuelling. The spill kit will contain fuel absorbent material, pads/mats and oil boom for use in the event of any accidental spill;
- Drip trays and fuel absorbent mats will be used during all refuelling operations;
- Onsite refuelling will be carried out by trained and competent personnel only;

- All plant and machinery will be serviced before being mobilized to site and regular leak inspections and fitness for purpose will be completed during the backfilling works;
- No substantial plant maintenance will be completed on site, any broken down plant will be removed from site to be fixed; and,
- The Site will operate under existing established management systems.

4.3.2 Operational Phase

4.3.2.1 Mitigation Measures for Groundwater Levels and Local Well Supplies

No dewatering is required at this Site. All extraction is and will be completed as dry workings with an anticipated finished depth across the Site of 71maOD, ~2-6m above the existing water level. There will be no impacts on groundwater levels arising from the Proposed Development.

No specific mitigation is required.

Continued seasonal monitoring of the local groundwater levels will be completed with the use of dataloggers in monitoring wells across the Site.

4.3.2.2 Mitigation Measures for Groundwater Vulnerability

In terms of impacting on the groundwater vulnerability of the Site, the extraction of sand and gravel across the extension area will have a negative effect on the Site in that the groundwater vulnerability rating will be higher, but this is consistent with existing and emerging baseline trends arising from the existing extraction area. Aggregate will be extracted in a phased manner from Zone A1, one A1, Zone B1 and Zone B2.

Proposed mitigation includes:

- Leaving ~4m-17m of overburden above the bedrock across the Site (i.e. 71mOD). Depth of the rock at the site has been confirmed by borehole drilling. The top of rock ranges in elevation from ca. 48 to ca. 67mOD.
- No extraction will occur below the winter groundwater table which has been recorded at a maximum of 69.5mOD.

4.3.2.3 Mitigation Measures for Surface Water Quality (Operational Phase)

No specific mitigation is required in relation to surface water quality as there is no proposed discharge to surface waters.

The Site is located within a bowl shaped depression, thus exclusion of surface water drainage from the Palatine Sream and the Lerr River is very manageable.

4.3.2.4 Mitigation Measures for Hydrocarbons

Same as those detailed in **Section 4.3.1.2** for the construction phase.

4.3.2.5 Mitigation for Potential Effects on Designated Sites

A natural buffer exists of ~1.3km exists between the River Barrow And River Nore SAC and the Site. This area will remain vegetated, and the permeability within this region will remain high, with a recharge coefficient of ~ 80%. This provides a soakage area and natural buffer zone for any surface waters which may arise.

Mitigation measures are outlined above, which when implemented, will provide the necessary protection to groundwater quality.

The proposed mitigation measures will ensure that there will be no impact on groundwater quality. Therefore, significant direct, or indirect effects on the River Barrow And River Nore SAC will not occur.

4.4 RESTORATION PHASE – LIKELY SIGNIFICANT EFFECTS AND MITIGATION MEASURES

Upon closure of Site operations, the intention for the Applicant is to restore the land to its current agricultural use with some biodiversity enhancement. The reinstatement will involve reinstating the current field boundaries and a reseeding of the Site.

The Proposed Development comprises importing approximately 1,125,000 tonnes of clean uncontaminated soil and stone by-product material to restore the Site. Infilling with this material will pose a very low risk to groundwater quality regardless of the vulnerability rating as no harmful contaminants will be present. In addition, the clean uncontaminated soil and stone by-product will not contain either organic matter or liquids that will form a source of organic contamination. All imported material will be determined as by-product at the source site before importation to the Site occurs.

No significant impacts on the water environment are envisaged during the restoration phase of the Proposed Development.

A summary of the WFD potential status change to the SWBs and the GWB arising from surface water and ground water quality impacts during the Proposed Development, in unmitigated and mitigated scenarios, are outlined in **Table I**.

Table I: Summary of WFD Status for Unmitigated and Mitigated Scenarios

SWB	WFD Code	Current Status	Assessed Potential Status Change - Unmitigated	Assessed Status with Mitigation Measures
SWB				
Palatine Stream_010	IE_SE_14P040200	Moderate	Moderate	Moderate
Lerr_030	IE_SE_14L010250	Poor	Poor	Poor
Lerr_040	IE_SE_14L010300	Poor	Poor	Poor
GWB				
New Ross GWB	IE_SE_G_152	Good	Moderate	Good

5. WFD COMPLIANCE ASSESSMENT CONCLUSIONS

WFD status for SWBs (Surface Water Bodies) and GWBs (Groundwater Bodies) in proximity to the Site are defined in **Section 2** above.

The Proposed Development comprises of a dry working sand and gravel pit. There is no proposed dewatering, and there is no proposed discharge to surface waters from the Site.

Mitigation for the protection of groundwater quality during the construction, operation and restoration phases of the Proposed Development will ensure the qualitative status of the underlying GWB will not be altered by the Proposed Development.

As such, the Proposed Development will not impact upon any surface water or groundwater body as it will not cause a deterioration of the status of the body and/or it will not jeopardise the attainment of good status.

As such, the Proposed Development:

- will not cause a deterioration in the status of all surface and groundwater bodies assessed;
- will not jeopardise the objectives to achieve 'Good' surface water/groundwater status;
- does not jeopardise the attainment of 'Good' surface water/groundwater chemical status;
- does not jeopardise the attainment of 'Good' surface water/groundwater quantity status;
- does not permanently exclude or compromise the achievement of the objectives of the WFD in other waterbodies within the same river basin district;
- is compliant with the requirements of the Water Framework Directive (2000/60/EC); and,
- is consistent with other Community Environmental Legislation including the EIA Directive (2014/52/EU), the Habitats Directive (92/43/EEC) and the Birds Directive (2009/147/EC) (Note that a full list of legislation complied with in relation to hydrology and hydrogeology is included in Section 8.2.1 to 8.2.2 of the EIAR).

* * * * * * * * * * * * * *

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APPENDIX 8-2

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BALLYBURN SAND AND GRAVEL PIT EXTENSION, BALLYBURN UPPER, CO. KILDARE

STAGE I - FLOOD RISK ASSESSMENT

FINAL REPORT

Prepared for:
Dan Morrisey & Co. (Plazamount Ltd)

Prepared by:
Hydro-Environmental Services

DOCUMENT INFORMATION

DOCUMENT TITLE:	**BALLYBURN SAND AND GRAVEL PIT EXTENSION, BALLYBURN UPPER, CO. KILDARE.**
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SIGNED:	 **Michael Gill B.A., B.A.I., M.Sc., MIEI** **Managing Director – Hydro-Environmental Services**

Disclaimer:
This report has been prepared by HES with all reasonable skill, care and diligence within the terms of the contract with the client, incorporating our terms and conditions and taking account of the resources devoted to it by agreement with the client. We disclaim any responsibility to the client, and others in respect of any matters outside the scope of the above. The flood risk assessment undertaken as part of this study is site-specific, and the report findings cannot be applied to other sites outside of the survey area which is defined by the site boundary. This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies upon the report at their own risk.

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1. INTRODUCTION

1.1 BACKGROUND

Hydro-Environmental Services (HES) were requested by Malone O'Regan Environmental Services ('MOR Environmental'), acting on behalf of Dan Morrisey & Co. (Plazamount Ltd), to undertake a site specific Stage I Flood Risk Assessment (FRA) for the Proposed Development at Ballyburn Upper, Gorteenvacan, Castledermot, Co. Kildare.

This FRA is carried out in accordance with 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DoEHLG, 2009).

1.2 STATEMENT OF EXPERIENCE

Hydro-Environmental Services ("HES") are a specialist geological, hydrological, hydrogeological and environmental practice which delivers a range of water and environmental management consultancy services to the private and public sectors across Ireland and Northern Ireland. HES was established in 2005, and our office is located in Dungarvan, County Waterford.

Our core area of expertise and experience is hydrology and hydrogeology, including flooding assessment and surface water modelling. We routinely work on surface water monitoring and modelling and prepare flood risk assessment reports.

This report was prepared by Michael Gill, Conor McGettigan and Nitesh Dalal.

Michael Gill (P. Geo., B.A.I., MSc, Dip. Geol., MIEI) is an Environmental Engineer with 22 years ofenvironmental consultancy experience in Ireland. Michael has completed numerous hydrological and hydrogeological assessments for various developments across Ireland. Michael has significant experience in surface water drainage issues, SUDs design, and flood risk assessment.

Conor McGettigan (BSc, MSc) is an Environmental Scientist with over 4 years' experience in environmental consultancy in Ireland. Conor holds an M.Sc. in Applied Environmental Science (2020) and a B.Sc. in Geology (2016) from University College Dublin. Conor has prepared the Land, Soils and Geology and Hydrology and Hydrogeology Chapters for numerous wind farm EIAR projects. Conor routinely competes WFD Assessments for a wide variety of projects including wind farms, quarries and sand and gravel pits.

Nitesh Dalal (B.Tech, PG Dip., MSc) is an Environmental Scientist Intern with over 7 years' experience in environmental consultancy and environmental management in India. Nitesh is pursuing an M.Sc. in Environmental Science (2024) and holds a PG Diploma in Health, Safety and Environment from Annamalai University, India (2021) and B.Tech. in Environmental Engineering (2016) from Guru Gobind Singh Indraprastha University, India (2016).

1.3 REPORT LAYOUT AND METHODOLOGY

This Stage I FRA report has the following format:

- Section 2 describes the proposed site setting and details of the Proposed Development;
- Section 3 outlines the hydrological and geological characteristics of the local surface water catchments in the vicinity of the Site;
- Section 4 deals with a site-specific flood risk assessment (FRA); and,
- Section 5 presents the FRA report conclusions.

As stated above this FRA is carried out in accordance with 'The Planning System and Flood Risk Management Guidelines for Planning Authorities' (DoEHLG, 2009). The assessment methodology involves researching and collating flood related information from the following data sources and field surveys:

- Base maps – Ordnance Survey of Ireland;
- OPW Flood Hazard Maps and flooding information for Ireland (www.floodmaps.ie);
- Geological Survey of Ireland databases (www.gsi.ie);
- EPA hydrology maps (www.catchment.ie); and,
- Site Walkover and drainage mapping.

2. BACKGROUND INFORMATION

2.1 INTRODUCTION

This section provides details on the topographical setting of the Site along with a description of the Proposed Development.

2.2 SITE LOCATION AND TOPOGRAPHY

The Site is situated at Ballyburn Upper where a deposit of sand and gravel is present, ca. 4km to the northeast of Carlow Town and ca. 4.3km south-southwest of Castledermot Town. The Site covers an area of ca. 37.8ha (ITM centre coordinates X:676639, Y680724) and generally extends in a southerly direction from Ballyburn quarry (henceforth referred to as the Site).

Topography generally varies from relatively flat to undulating due to the variable thickness of glaciofluvial sand and gravels in the area. The Site is generally set at a higher elevation to its surrounding lands, with overall topography rising eastwards towards the M9 motorway. Elevations range from 73 meters above Ordnance Datum (mOD) to 83mOD within the Site.

The Site is accessed in the north via the L4012 public road that bounds the Site to the north and east. A site location map is included as **Figure A**.

The extraction of sand and gravel material has been in operation within the northern portions of the Site, moving progressively south. Agricultural lands surround the Site on all sides and there are a number of domestic dwellings and farm holdings in the vicinity of the Site.

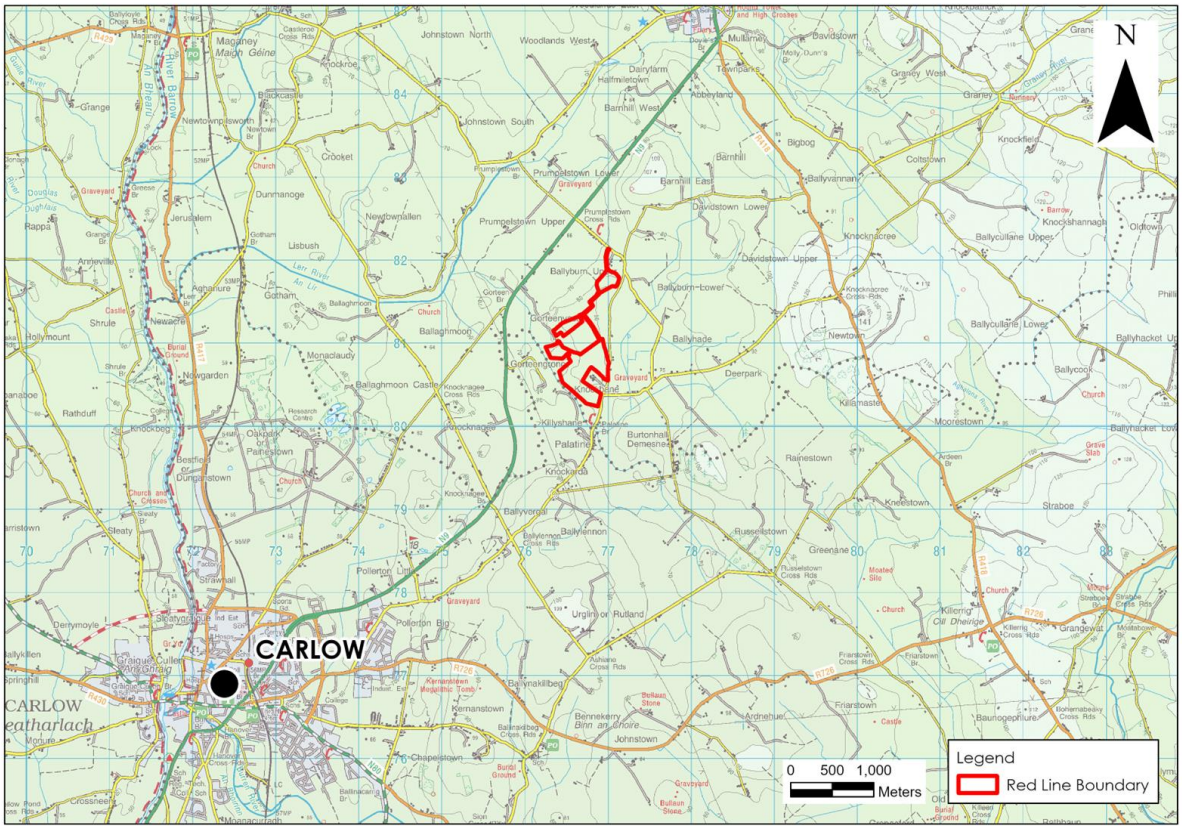

Figure A: Site Location Map

2.3 PROPOSED DEVELOPMENT DETAILS

The Proposed Development will consist of the following components:

- The continuance of use of existing site infrastructure, including all processing equipment, machinery, entrance, office/welfare facilities, carpark, wheel wash, weighbridge, haul routes and other ancillary infrastructure;
- The extension of the Site to known quality reserves in the south (ca. 28.3ha). The extraction of this extension area will result in a pit floor at ca. 71m OD, which is above the winter water table. The applicant intends to extract ca. 1.7million m3 of aggregates or ca. 3,060,000t over the lifetime of the project; and,
- The importation of 1,125,000t of clean, uncontaminated soil and stone by-product materials to complement overburden originating from the Site during the restoration process (which will be restored to between 73/74m OD).

This application site will cover an area of ca. 37.8ha. within an overall landholding of 72.7 hectares (including the extant permission). Planning permission is being sought for 15 years (up to 6 months for the construction phase, 14 years for the operationalal phase and 6 months for the restoration phase).

There is no propsoed water discharge from the Site during the Proposed Development.

No extraction will occur below the winter groundwater table which has been recorded at a maximum of 69.5mOD.

3. EXISTING ENVIRONMENT AND CATCHMENT CHARACTERISTICS

3.1 INTRODUCTION

This section gives an overview of the hydrological and geological characteristics of the Site and the surrounding area.

3.2 BASELINE HYDROLOGY

3.2.1 Regional and Local Hydrology

The Site is located within the Barrow surface water catchment (Hydrometric Area 14) of the South Eastern River Basin District (SERBD).

On a more local scale the Site is located in the Lerr River sub-catchment (Lerr_SC_010). Within the Lerr River sub-catchment the Site is mapped within 2 no. WFD river sub basins, the Lerr_030 sub-basin to the north where the existing sand and gravel pit lies and the Palatine Stream_010 river sub- basin in the towards the south where the majority of the extension works are proposed.

A tributary of the Palatine Stream, referred to by the EPA as the Barnhill East stream (EPA Code: 14B69) flows to the south near the east of the Site and feeds into the Palatine stream approximately 500m south of the Site. The Palatine Stream itself flows in a north westerly direction to the west of the Site and discharges into the River Lerr. The River Lerr continues west and discharges into the River Barrow approximately 5km from the Site.

There is no direct hydraulic connection from the Site to any of the local watercourses.

A local hydrology map is shown as **Figure B** below

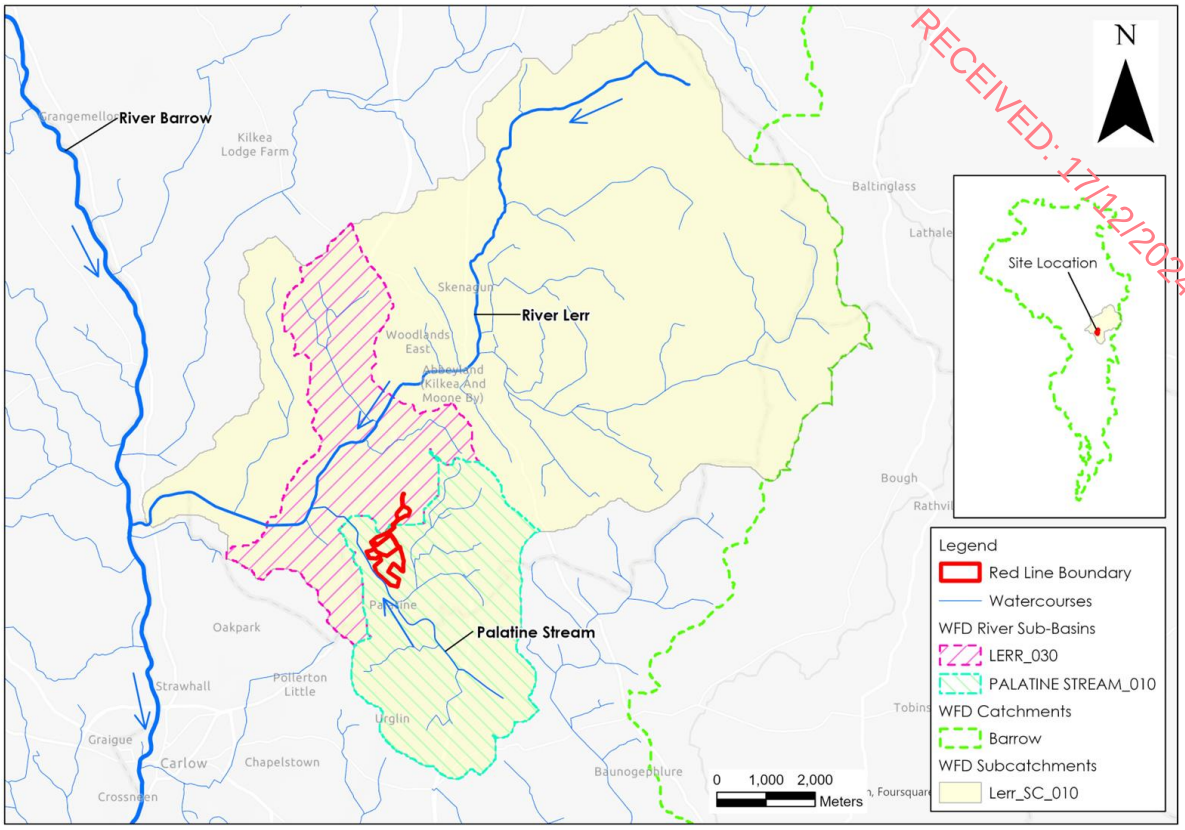

Figure B: Local Hydrology Map

3.2.2 Rainfall and Evaporation

The SAAR (Standard Average Annual Rainfall 1981 - 2010) recorded at Oak Park (approximately 3.5km southwest of the Site), the closest rainfall station to the Site with long-term SAAR data, is ca. 840.2mm (www.met.ie).

The average potential evapotranspiration (PE) at Kilkenny (34km to the southwest) is taken to be 458.8mm/yr (www.met.ie). The actual evapotranspiration (AE) is calculated to be 435.9mm/yr (95% PE). Using the above figures the effective rainfall (ER) for the area is calculated to be (ER = SAAR – AE) 404.3.4mm/yr.

In addition to average rainfall data, extreme value rainfall depths are available from Met Eireann. **Table A,** below presents return period rainfall depths for the area of the Site. These data are taken from https://www.met.ie/climate/services/rainfall-return-periods and they provide rainfall depths for various storm durations and sample return periods (1-year, 5-year, 30-year, 100-year).

Table A: Return Period Rainfall Depths (mm) for the Site

	Return Period (Years)			
Duration	**1**	**5**	**30**	**100**
5 mins	3.7	6.1	10.3	14.2
15 mins	6.1	10.0	16.9	23.3
30 mins	7.8	12.5	23.0	27.4
1 hours	10.1	15.6	24.5	32.3
6 hours	19.6	27.8	39.6	49.4
12 hours	25.4	34.7	47.8	58.3
24 hours	32.8	43.3	57.6	68.7
2 days	40.1	51.8	67.4	79.3

3.3 GEOLOGY

The published soils map (www.epa.ie) shows that the majority of the Site and the surrounding area is mapped to be overlain by shallow well drained mainly basic mineral soils (BminSW). An area of cut over raised peat (Cut) is mapped to the southeast of the Site and alluvium soils are mapped along the Palatine (Stream) to the south and west of the Site.

Based on the GSI subsoils map (www.gsi.ie), gravels derived from limestones (GLs) are the main subsoil type mapped within the Site. The gravels and sand form a ridge running in a north to south direction through the Site, and which drops away to the tributary of the River Lerr to the southwest, and falls away to the eastern section of the Site, along the local road. These deposits are also mapped extensively along the River Barrow, situated 5km west of the Site. Other subsoils mapped within the Site comprise of till ferived from limestones (TLs) in the low lying northwest and eastern sections of the Site. An area of cut peat is also mapped immediately to the southeast. Alluvium is also mapped along the Palatine Stream. Till derived from limestones are the dominant subsoil type in the surrounding areas. Further to the east, till derived from granites are mapped by the GSI.

According to the GSI bedrock mapping (www.gsi.ie), the bedrock beneath the Site comprises of the Tullow Type 2 Equigranular Granite. It is described as a "pale fine to coarse grained granite" from the Caledonian period. The Quinagh Formation is mapped ~1.3km to the west, and is described as comprosing of "lenticular mudstone and coarse siltstone".

There are no mapped faults or folds within the Site.

3.4 HYDROGEOLOGY

The bedrock underlaying the Site is classified by the GSI as a Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones.

The groundwaterbody that underlies the Site is the New Ross GWB (EU_CD: IE_SE_G_152) and is classified as being "Poorly productive bedrock". Groundwater flow within the New Ross GWB is likely confined to fractures, fissures, joints, bedding planes and the uppermost part of the bedrock. Groundwater is generally close to the surface, especially along the river. Groundwater flow is influenced by topography and mirrors the ground levels. Most groundwater flow is thought to be relatively shallow concentrating in the top 10 m to 30 m of the rock profile. The flow is therefore likely to follow local variations in topography (GSI, 2004).

3.5 DESIGNATED SITES & HABITATS

Within the Republic of Ireland designated sites includes Natural Heritage Areas (NHAs), Proposed Natural Heritage Areas (pNHAs), Special Areas of Conservation (SACs), candidate Special Areas of Conservation (cSAC) and Special Protection Areas (SPAs).

Designated sites include National Heritage Areas (NHAs), proposed National Heritage Areas (pNHAs), Special Areas of Conservation (SACs), candidate Special Areas of Conservation (cSAC) and Special Protection Areas (SPAs).

The Site is not located within any designated sites. The closest designated site is the River Barrow And River Nore SAC (Site Code: 002162) located ca. 1.3km northwest of the Site along the Lerr River. The Oakpark pNHA (Site Code: 000810) is ca. 2.9km west of the Site. There are no other designated sites within a 5km radius of the Site.

4. SITE SPECIFIC FLOOD RISK ASSESSMENT

4.1 INTRODUCTION

The following assessment is carried out in accordance with '*The Planning System and Flood Risk Management Guidelines for Planning Authorities*' (DoEHLG, 2009). The basic objectives of these guidelines are to:

- Avoid inappropriate development in areas at risk of flooding;
- Avoid new developments increasing flood risk elsewhere, including that which may arise from surface water run-off;
- Ensure effective management of residual risks for development permitted in floodplains;
- Avoid unnecessary restriction of national, regional or local economic and social growth;
- Improve the understanding of flood risk among relevant stakeholders; and,
- Ensure that the requirements of EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management.

A stage 1 assessment of flood risk requires an understanding of where the water comes from (*i.e.* the source), how and where it flows (*i.e.* the pathways) and the people and assets affected by it (*i.e.* the receptors). It is necessary to identify whether there may be any flooding or surface water management issues related to the proposed site that may warrant further detailed investigation.

As per the guidance (DOEHLG, 2009), the stage 1 of a flood risk assessment comprises:

- *Flood risk identification* – identify whether there are surface water flooding issues at a site; and,
- *Initial flood risk assessment* - confirm sources of flooding that may affect a proposed development.

4.2 FLOOD RISK ASSESSMENT PROCEDURE

This section of the report details the site-specific flood risk assessment carried out for the Proposed Wind Farm site and surrounding area. The primary aim of the assessment is to consider all types of flood risks and the potential impact on the development. As per the relevant guidance (DoEHLG, 2009), the stages of a flood risk assessment are:

- *Flood risk identification* – identify whether there are surface water flooding issues at a site;
- *Initial flood risk assessment* - confirm sources of flooding that may affect a proposed development; and,
- *Detailed flood risk assessment – quantitative appraisal of potential risk to a proposed development*.

As per the Guidelines, there are essentially two major causes of flooding:

Coastal flooding, which is caused by higher sea levels than normal, largely as a result of storm surges, resulting in the sea overflowing onto the land. Coastal flooding is influenced by the following three factors, which often work in combination:

- High tide level;

- Storm surges caused by low barometric pressure exacerbated by high winds (the highest surges can develop from hurricanes); and,

- Wave action, which is dependent on wind speed and direction, local topography and exposure.

Due to its inland location, coastal flooding is not applicable to the site.

Inland flooding which is caused by prolonged and/or intense rainfall. Inland flooding can include a number of different types:

- Overland flow occurs when the amount of rainfall exceeds the infiltration capacity of the ground to absorb it. This excess water flows overland, ponding in natural hollows and low-lying areas or behind obstructions. This occurs as a rapid response to intense rainfall and eventually enters a piped or natural drainage system.
- River flooding occurs when the capacity of a watercourse is exceeded or the channel is blocked or restricted, and excess water spills out from the channel onto adjacent low-lying areas (the floodplain). This can occur rapidly in short steep rivers or after some time and some distance from where the rain fell in rivers with a gentler gradient.

- Flooding from artificial drainage systems results when flow entering a system, such as an urban storm water drainage system, exceeds its discharge capacity and the system becomes blocked, and / or cannot discharge due to a high water level in the receiving watercourse. This mostly occurs as a rapid response to intense rainfall. Together with overland flow, it is often known as pluvial flooding. Flooding arising from a lack of capacity in the urban drainage network has become an important source of flood risk, as evidenced during recent summers.

- Groundwater flooding occurs when the level of water stored in the ground rises as a result of prolonged rainfall to meet the ground surface and flows out over it, i.e. when the capacity of this underground reservoir is exceeded. Groundwater flooding tends to be very local and results from interactions of site-specific factors such as tidal variations. While water level may rise slowly, it may be in place for extended periods of time. Hence, such flooding may often result in significant damage to property rather than be a potential risk to life.

- Estuarial flooding may occur due to a combination of tidal and fluvial flows, i.e. interaction between rivers and the sea, with tidal levels being dominant in most cases. A combination of high flow in rivers and a high tide will prevent water flowing out to sea tending to increase water levels inland, which may flood over river banks.

The Flood Risk Management Guidelines provide direction on flood risk and development. The guidelines recommend a precautionary approach when considering flood risk management and the core principle of the guidelines is to adopt a risk based sequential approach to managing flood risk and to avoid development in areas that are at risk. The sequential approach is based on the identification of flood zones for inland and coastal flooding.

Flood zones are geographical areas within which the likelihood of flooding is in a particular range and they are a key tool in flood risk management within the planning process as well as in flood warning and emergency planning.

There are three types or levels of flood zones defined within the guidelines:

Flood Zone A – where the probability of flooding from rivers and the sea is highest (greater than 1% or 1 in 100 for river flooding or 0.5% or 1 in 200 for coastal flooding);

Flood Zone B – where the probability of flooding from rivers and the sea is moderate (between 0.1% or 1 in 1000 and 1% or 1 in 100 for river flooding and between 0.1% or 1 in 1000 year and 0.5% or 1 in 200 for coastal flooding); and,

Flood Zone C – where the probability of flooding from rivers and the sea is low (less than 0.1% or 1 in 1000 for both river and coastal flooding). Flood Zone C covers all areas of the plan which are not in zones A or B.

Once a flood zone has been identified for a site, the guidelines set out the different types of development appropriate to each identified zone (pg 25, Table 3.1 of the Guidelines). Exceptions to the restriction of development due to potential flood risks are provided for through the application of a Justification Test, where the planning need and the sustainable management of flood risk to an acceptable level must be demonstrated by the Applicant.

The Justification Test has been designed to rigorously assess the appropriateness, or otherwise, of particular developments that, for the reasons outlined above, are being considered in areas of moderate or high flood risk. The test is comprised of two processes.

- The first is the **Plan-making Justification Test** described in chapter 4 of the Guidelines and used at the plan preparation and adoption stage where it is intended to zone or otherwise designate land which is at moderate or high risk of flooding. Plan making Justification Tests are made at Plan/Policy development stage such as County Development Plans, or Local Area Plans.

- The second is the **Development Management Justification Test** described in chapter 5 of the Guidelines and used at the planning application stage where it is intended to develop land at moderate or high risk of flooding for uses or development vulnerable to flooding that would generally be inappropriate for that land. For example, application of Development Management Justification Test would be required at a site specific level, such as for this FRA, if a Justification Test is required.

4.3 FLOOD RISK IDENTIFICATION

4.3.1 Soils Maps – Fluvial Maps

The soils in this area according to published soil maps from the EPA (www.EPA.ie) show that the Site is overlain by mostly basic shallow well drained mineral soils (BminSW) while a small part of the southern section of the Site is overlain by basic shallow poorly drained mineral soils (BminSP).

Alluvium soils are mapped along the Palatine (Stream) to the south and west of the Site. These mapped alluvium soils do not encroach upon the Site.

4.3.2 Historical Mapping

To identify those areas as being at risk of flooding, historical mapping (*i.e.* 6" and 25" base maps) were consulted. There was no identifiable map text on local available historical 6" or 25" mapping for the local area that would identify lands that are "liable to flood" within or in the vicinity of the Site.

4.3.3 OPW National Flood Hazard Mapping

The OPW Indicative Flood Maps have no records of recurring flood incidences within the Site. (**Figure C** below).

The OPW National Flood Hazard Maps record a recurring flood incident along the L4012 road that runs along the eastern site boundary at Knockbane. The local area engineer's report states that a localised hollow on the road is flooded every year after heavy rain as the water flows off the land (Flood ID: 1581). No other recurring flood incidences are recorded in the vicinity of the Site.

No areas within the Site are mapped as an OPW Drainage District, i.e. an area where drainage schemes to improve land for agricultural purposes were constructed or as Benefiting Lands, i.e. land identified by the OPW as potentially benefitting from the implementation of Arterial (Major) Drainage Schemes and an indicator of land subject to flooding and poor drainage.

However, Benefited Lands are mapped along the course of the Barnhill East tream to the east of the Site and along the Palatine Stream to the west.

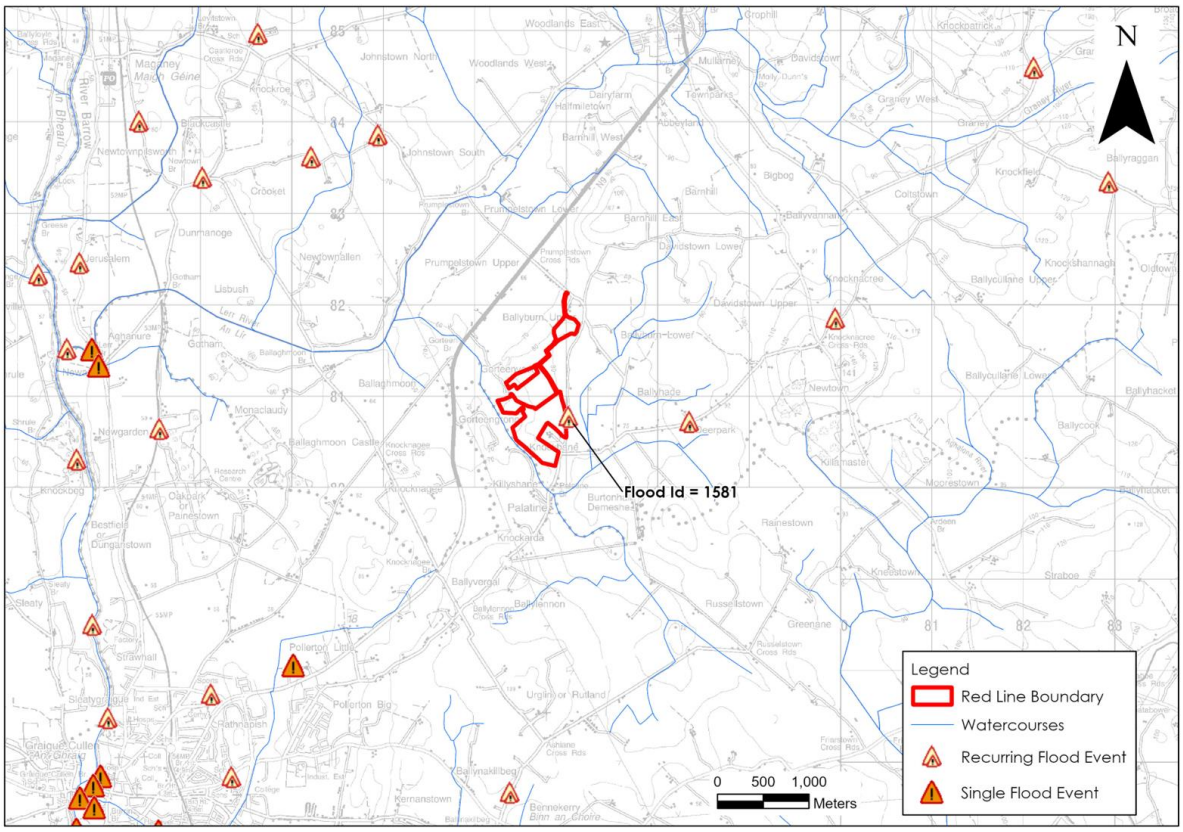

Figure C: OPW Flood Hazard Mapping (www.floodinfo.ie)

4.3.4 Winter 2015/2016 Surface Water Flooding

The GSI Winter 2015/2016 Surface Water Flooding map shows fluvial (rivers) and pluvial (rain) floods, excluding urban areas, during the winter 2015/2016 flood event, which was the largest recorded flood event in many areas. This surface water flood map is available at www.floodinfo.ie.

This flood map does not record any surface water flooding within the Site or in the surrounding areas. The closest recorded flood zone is located approximately 1.2km to the west of the Site (refer to **Figure D**). The affected areas are located adjacent to the L8090 road but do not encroach upon the Site.

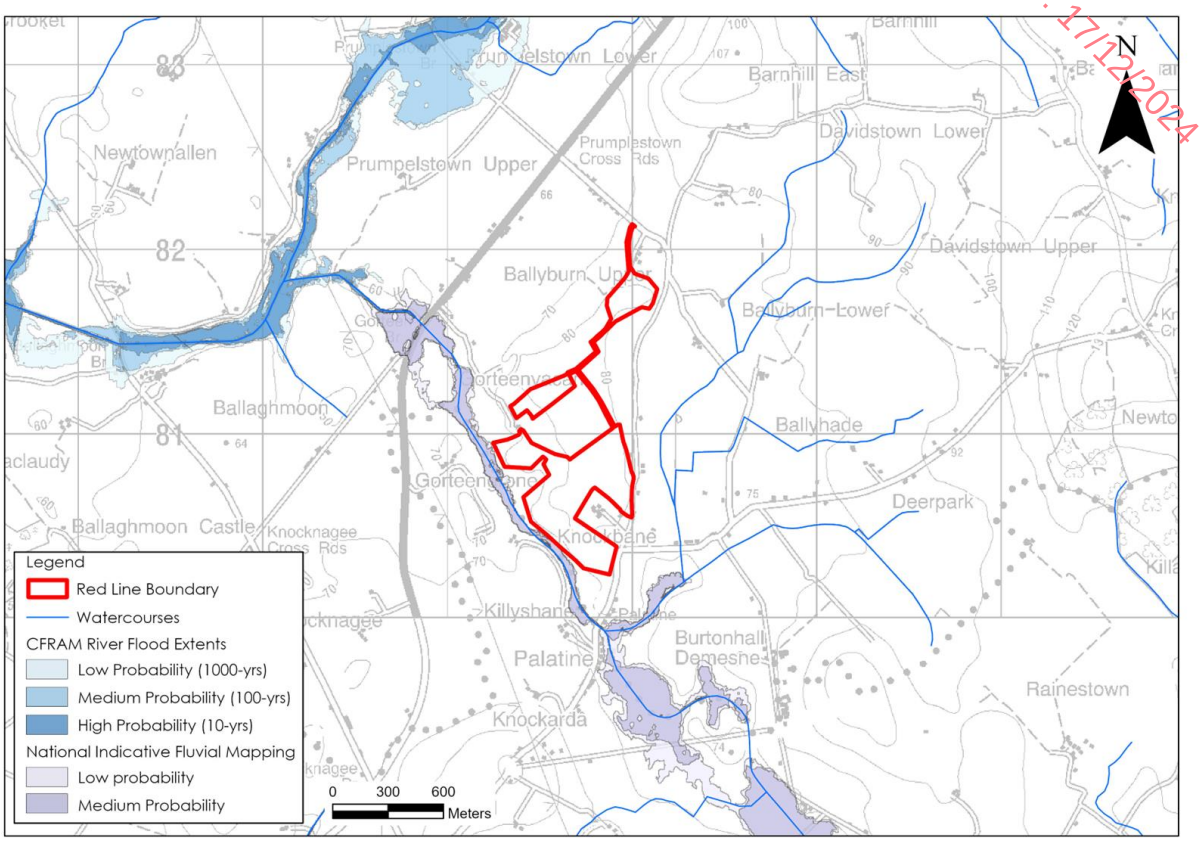

Figure D: GSI Historical 2015/2016 Flood Map

4.3.5 CFRAM Maps – Fluvial and Pluvial Flooding

Where complete, the Catchment Flood Risk Assessment and Management (CFRAM) OPW Flood Risk Assessment Maps are now the primary reference for flood risk planning in Ireland and supersede the previous PFRA maps. CFRAM mapping of river flood extents are available at www.floodinfo.ie.

CFRAM mapping has not been completed for the area of the Site. The closest CFRAM mapped flood zones are located along the Lerr River, ~1km west of the Site. No CFRAM mapping extents encroach onto the Site.

A fluvial map showing the CFRAM Mapping for the present day is included as **Figure E** below.

4.3.6 National Indicative Fluvial Flood Mapping

The National Indicative Fluvial Flood Mapping (NIFM) (www.floodinfo.ie) shows probabilistic fluvial flood zones for catchments greater than 5km^2 for which flood maps were not produced under the CFRAM Programme.

The Present Day Scenario has been generated using methodologies based on historic flood data and does not take into account the potential changes due to climate change. The potential effects of climate change on flooding have been separately modelled (see **Section 4.3.9** below.)

NIFM fluvial flood zones are mapped along the Palatine Stream to the west of the Site. The 1 in 100-year and 1 in1,000-year fluvial flood zones do not encroach upon the Site.

A fluvial map showing the National Indicative Fluvial Flood Mapping for the present day is included as **Figure E** below.

As such, the Site is located in Fluvial Flood Zone C, where the probability of fluvial flooding is low (less than 0.1%).

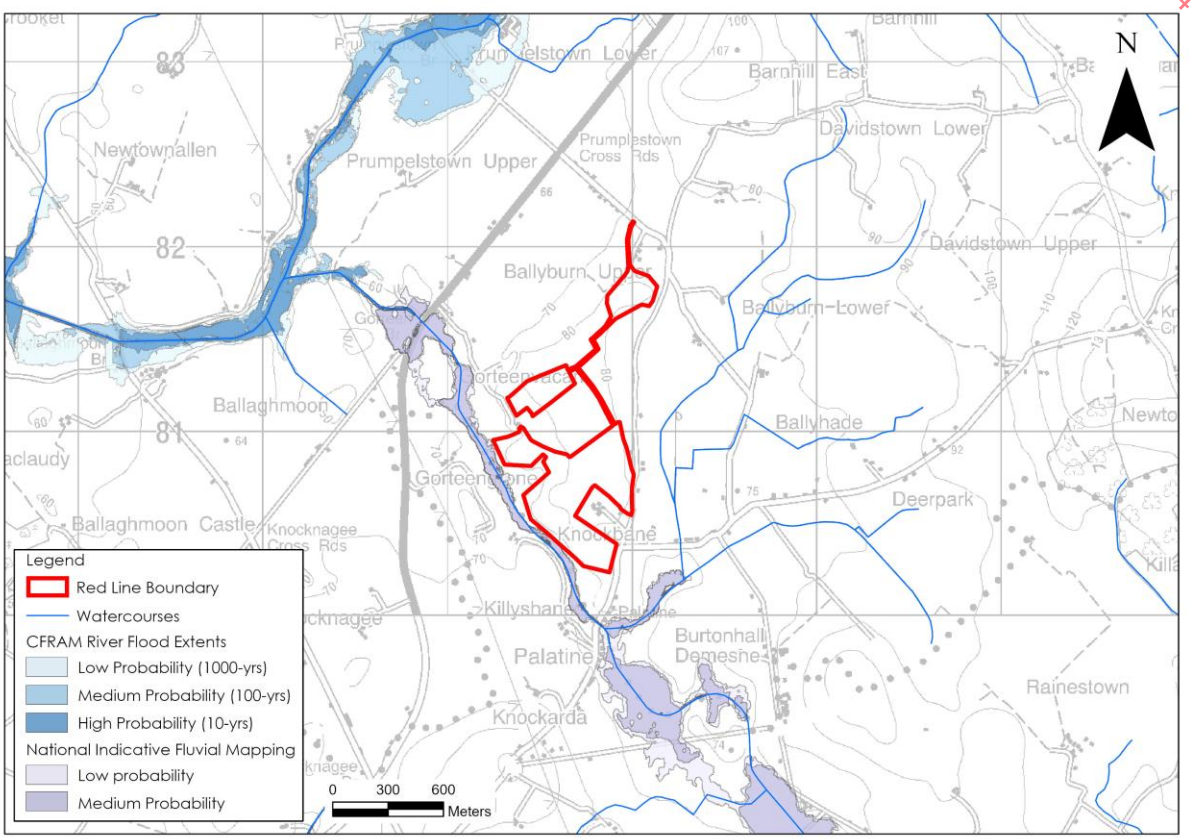

Figure E: CFRAM and OPW National Indicative Flood Mapping (Present-Day Scenario)

4.3.7 Groundwater Flooding

The GSI Historical Groundwater flood map and the modelled groundwater flood extents map (www.floodinfo.ie) do not show the occurrence of any groundwater flooding within the Site.

4.3.8 Coastal Flooding

The Site is located ~50km from the coast and ~80m above sea level. Therefore, the Site is not at risk of coastal / tidal flooding.

4.3.9 Climate Change

It is likely that climate change will have significant impacts on flooding and flood risk in Ireland due to rising sea levels, increased winter rainfall and more intense rainfall. The CFRAM Programme has modelled flooding associated with potential future climate change scenarios. These CFRAM flood zones have been modelled for 2 no. potential future climate change scenarios, with the Mid-Range and High-End Future Scenario flood extents generated using an increase in rainfall of 20% and 30% respectively.

However, as stated above no CFRAM modelling has been completed in the vicinity of the Site. CFRAM River flood extents show similar flood zones along the River Lerr as described above in **Section 4.3.5**.

Similarly, there are NIFM flood zones have also been modelled for the 2 no. potential future climate change scenarios. Both of these modelled flood extents show similar flood zones to the Present Day Scenario discussed above in **Section 4.3.6**. Therefore, flood zones at the Site are unlikely to be significantly impacted by future climate change.

4.3.8 Summary – Flood Risk Identification

Based on the information gained through the flood identification process, the Site is not constrained by coastal, fluvial or groundwater flooding. The Site is located within the Flood Zone C and is at low risk of flooding.

4.4 INITIAL FLOOD RISK ASSESSMENT

4.4.1 Hydrological Flood Conceptual Model

Potential flooding in the vicinity of the Site can be described using the Source – Pathway – Receptor Model (S-P-R).

There are no apparent sources of flooding at the Site having considered tidal, fluvial and pluvial sources. Groundwater flooding is also not considered to be an issue at the Site with the proposed pit floor level of 71mOD being above the maximum winter water levels of 69.6mOD. During the operational phase there may be minor ponding of surface water on the pit floor, however due to the permeable nature of the sand and gravel subsoils, water will recharge to ground.

4.4.2 Summary – Initial Flood Risk Assessment

Based on the information gained through the flood identification process and Initial Flood Risk Assessment process it has been determined that flooding is unlikely to be problematic in the area of the site proposed for development. The potential sources of flood risk for the Site are outlined and assessed in **Table B.**

Table B: S-P-R Assessment of Flood Sources for the Site

Source	Pathway	Receptor	Comment
Tidal	Not applicable	Land and infrastructure.	The Site is ~50km from the coast and ~80m above sea level. There is no risk of coastal flooding.
Fluvial	Flooding from stream	Land and infrastructure	CFRAM and NIFM fluvial mapping extents do not encroach the Site. Therefore, the Site is located in Fluvial Flood Zone C.
Pluvial	Ponding of rainwater on site	Land and infrastructure.	No risk of pluvial flooding at the Site given the topography and altitude of the site and the well drained and permeable soils and subsoils.
Surface water	Surface ponding/ Overflow	Land and infrastructure	Same as above (pluvial).
Groundwater	Rising groundwater levels	Land and infrastructure.	Based on local hydrogeological regime and GSI mapping, there is no apparent risk from groundwater flooding at the Site.

4.5 REQUIREMENT FOR A JUSTIFICATION TEST

The matrix of vulnerability versus flood zone to illustrate appropriate development and that required to meet the Justification Test[1] is shown in **Table C** below.

The Proposed Development can be categorised as "Less Vulnerable Development" as it is associated with the extraction of sand and gravel subsoils. The Site is located in Flood Zone C and is at low risk of flooding.

Therefore, the Proposed Development is appropriate from a flood risk perspective and a Justification Test is not required.

Table C: Matrix of Vulnerability versus Flood Zone

	Flood Zone A	Flood Zone B	Flood Zone C
Highly vulnerable development (including essential infrastructure)	Justification test	Justification test	Appropriate
Less vulnerable development	Justification test	Appropriate	**Appropriate**
Water Compatible development	Appropriate	Appropriate	Appropriate

Note: Taken from Table 3.2 (DoEHLG, 2009)
Bold: *Applies to this project*

[1] *A 'Justification Test' is an assessment process designed to rigorously assess the appropriateness, or otherwise, of particular developments that are being considered in areas of moderate or high flood risk, (DoEHLG, 2009).*

5. REPORT CONCLUSIONS

- A flood risk identification study was undertaken to identify existing potential flood risks associated with the proposed Ballyburn sand and gravel pit expansion situated in Ballyburn, Co. Kildare. From this study:
  - No instances of historical flooding were identified in historic OS maps;
  - No instances of recurring flooding were identified on OPW maps within the Site. One recurring flood is recorded along the L4012 road that runs along the sites eastern boundary;
  - The GSI Groundwater Flood Mapping does not record any historic or predictive groundwater flood zones within the Site; and;
  - No CFRAM of NIFM fluvial flood zones encroach upon the Site.
- The OPW National Indicative Flood mapping indicates that fluvial flooding does occur along the Palatine Stream in the vicinity of the Site, yet no fluvial mapped extents are mapped to infringe on the site boundary. No groundwater flooding is recorded within the Site;
- The Proposed Development does not involve any discharge to surface waters and will therefore not increase the downstream fluvial flood risk. All rainfall falling within the extraction areas will recharge to ground as per the existing greenfield conditions; and,
- The overall risk of flooding posed by the expansion of the sand and gravel pit and associated works within the the site is negligible.

* *

6. REFERENCES

AGMET	1996	Agroclimatic Atlas of Ireland.
DOEHLG	2009	The Planning System and Flood Risk Management.
Met Eireann	1996	Monthly and Annual Averages of Rainfall for Ireland 1961-1990.
GSI	2004	New Ross GWB: Summary of Initial Characterisation.

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