Castlepollard Quarry, Deerpark, Castlepollard, Co. Westmeath

Castlepollard Quarry

Environmental Impact Assessment Report

Non-Technical Summary

February 2022

LAGAN
Part of the Breedon Group

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1 INTRODUCTION

1.1 GENERAL BACKGROUND

This Environmental Impact Assessment Report (EIAR) pertains to a proposed development at an existing limestone quarry at Deerpark, Castlepollard, Co. Westmeath, known as Castlepollard Quarry (Refer to Figures 1.1 to 1.3). The development, will consist of the continued use and operation of the existing quarry (permitted under P.A. Ref. 01/525), including deepening of the quarry, along with minor amendments to the permitted quarry layout comprising an extraction area of c. 4 ha within an overall application area of c. 11.4 ha. The development will include provision of some new site infrastructure including water management system, wheelwash and other ancillaries.

Lagan Materials Ltd (Lagan) has full control of the lands via a leasehold interest in the property.

The EIAR and accompanying planning application are being submitted by Lagan for consideration to Westmeath County Council, which is the competent authority for the proposed development. The application has been prepared and compiled under the supervision of John Sheils, (B.Eng. (Mining), MSCS, MRICS) on behalf of the applicant, Lagan. John Sheils is the principal of "J Sheils Planning & Environmental Ltd" (JSPE), a company that provides planning, environmental and valuation services and specialises in the areas of mineral extraction and inert waste management. In addition to the studies within the EIAR carried out by J Sheils Planning & Environmental Ltd (JSPE), some additional technical studies have been carried out by independent consultants. These studies are incorporated within the EIAR or are attached to the EIAR as appendices.

1.2 SITE LOCATION & DESCRIPTION

The quarry is located in the Townland of Deerpark c. 2 km southeast of Castlepollard and c. 13.5 km northwest of Delvin, Co. Westmeath. The quarry is located on the southwest side of, and with direct access onto, the R395 regional road connecting Edgeworthstown, Castlepollard, Collinstown and Delvin (See Figures 1.1 & 1.2).

The site is almost rectangular with an axial orientation of NW-SE. The access road extends from the northeastern corner of the main section of the site c. 130 m to the R395 regional road. The existing site layout is shown by Figure 1.3.

The site occurs at an elevation of 88 m AOD along the northern boundary and a maximum elevation of 128 m AOD within the site and along the longitudinal axis of the ridge. The topography of the region is characterised by a rolling, hilly landform with prominent hills topped with cherty limestone with enclosed lakes and areas of peat deposits.

To date, extraction has taken place in the northern and central sections of the quarry. The quarry comprises disturbed ground in a large, level processing area located in the northern section of the site and a central horseshoe-shaped extraction area driven into the northern end of the limestone ridge. The extraction area is bordered by copses of trees on the flanks

of the ridge with grassland atop, which has been stripped of overburden within the area proposed for extraction.

The floor of the quarry is at c. 88 m AOD. It is proposed to develop an additional extractive bench to c. 70m AOD. The site will continue to be worked from the existing quarry area in a southeasterly direction in a series of 14 to 18 metre benches between 128 and 70 m AOD.

The proposed development will include upgrading of the Water Management System. Development of the quarry at depth below the current floor will require dewatering and discharge to surface water. The proposed discharge to surface water will be subject to a licence to discharge to surface water as required under Section 4 of the Local Government (Water Pollution) Act, 1977. The design specifications include settlement tanks, appropriately sized hydrocarbon interceptor, and mechanisms of discharge.

The site has the benefit of being strategically located on the R395 regional road, which connects Edgeworthstown and Castlepollard c. 20 and 2 km, respectively, to the northwest with Delvin c. 13.5 km to the southeast. The proposed haulage route for all site-related HGV traffic is therefore directly onto the R395. As such, site traffic will be immediately directed onto the regional road network and thus avoid adversely impacting the local road network.

The asphalt plant previously granted planning permission under P.A. Ref. 01/525 has been removed and will not be reinstalled as part of this proposed application.

An average extraction capacity of 100,000 tonnes is anticipated as part of the proposed development over a 20 year extraction life for the proposed development plus an additional two years to complete final restoration works. The volume of traffic generated by the proposed development can be comfortably accommodated by the road network.

Land-use in the area consists of a patchwork of variably small to large agricultural fields, which are predominantly held in pasture, with lesser coniferous and mixed forest, and transitional woodland scrub. There are two remnant areas of mixed broad leaved woodland located on the verges of the main quarry area. The dominant species are Ash and Hazel, with hawthorn, blackthorn, holly, willow, ivy, bramble and gorse.

Outside of the immediate environs of the urban areas of Castlepollard and Delvin, and the rural villages of Collinstown, Multyfarnham, Dromone, Coole, Fore and Drumcree, the settlement pattern in the area can be described as low-intensity rural settlement, with dispersed farmsteads and one-off residences, as well as diffuse or discontinuous ribbon development along roadsides on the approaches to the town of Castlepollard. Residential property in the area typically comprises one-off single residences and farmsteads along public roads and to a minor extent, along and at the end of lanes off the public roads. The closest large residential settlement to the site is Castlepollard, which is located c. 2 km to the northwest. There are 10 residences within 250 m, 16 within 500 m and 42 within 1 km of the site planning application boundary. A cluster of 6 residences are located within 250 m on the east side of the R395 across from the site entrance and north along the L5743. There are no occupied residences within the application site or landholding, and the closest is located c. 270 m northeast of the quarry extraction area.

1.3 APPLICANT

The applicant, Lagan Materials Limited ('Lagan'), is part of Breedon Group plc. Breedon is a public company with ordinary shares traded on the Alternative Investment Market (AIM). Breedon is a leading construction materials group in Britain and Ireland. The company employs approximately c. 3,600 people, and operates 2 cement plants, 70 quarries, 40 asphalt plants, 200 ready-mixed concrete plants, 9 concrete and clay products plants, 4 contract surfacing businesses, 6 import/export terminals and 2 slate production facilities.

Breedon trades in the Republic of Ireland as Lagan Materials Ltd., a fully-integrated aggregates and downstream products business headquartered in Dublin. It comprises all Breedon's construction materials and contracting services businesses (aggregates, asphalt, ready–mixed concrete, bitumen, contract surfacing highway maintenance, civil engineering, and airfield construction) in the Republic of Ireland. Lagan and the wider Breedon Group are fully committed to sustainability and social responsibility.

2 REASONABLE ALTERNATIVES

The Directive 2014/52/EU requires "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 existing site comprises a small-sized limestone quarry, which is being worked using mobile crushing and screening plant and machinery. The 'Do Nothing' alternative means all quarrying activities would cease. The site would be restored as per the requirements of the existing planning permission (P.A. Ref. 01/525, PL 25.128072), such that the lands would be returned to beneficial after-use. However, the resources of the quarry would remain in situ and thus unutilised at a time when the economy and construction industry are growing and demand for aggregates is increasing.

Aggregates used in construction are won from quarries and sand and gravel pits. There are no reasonable alternatives in the near term to the current terrestrial sources of aggregates. Secondary aggregates cannot be relied upon as a real alternative to primary aggregates, given on-going issues with classification of end-of-waste and the very low volume of C&D waste suitable for recycling as secondary aggregates for use in construction.

Today, marine aggregates are dredged from the seabed in the UK and elsewhere around the globe, but none is being exploited in Ireland. In the absence of significant volumes of aggregates from marine and recycled/ secondary sources, terrestrial deposits, such as at Castlepollard Quarry, will continue to be the main source of construction aggregates in Ireland.

In considering alternative locations it is a basic principle that minerals can only be worked where they naturally occur. The products are generally of low unit value such that the most significant cost is transportation. Thus, most quarries typically operate within a radius of c. 25-30 km of their market. The site has the benefit of being strategically located on the R395 regional road and within c. 2 km south of Castlepollard, c. 13.5 km northwest of Delvin, c. 13.5 km southwest of Oldcastle, c. 15.5 km southwest of Mullingar, and numerous other smaller urban centres within the site's natural market of County Westmeath and bordering areas of counties Longford, Cavan and Meath.

It is generally considered preferable to allow applications for continuance of use and extensions to existing mineral workings in contrast to opening new quarries at 'greenfield' sites. The continued use and operation of the existing permitted quarry, along with the deepening of the quarry, also has the benefit of existing infrastructure. Furthermore, an important consideration is that the site has an established history of quarry working, has proven reserves of good quality rock, and is in the control of the applicant.

The scale of the development refers to the scale or rate of production and is dictated by many considerations, including the volume of the resource, capital costs, and cost efficiencies. The scale of the operation under planning permission P.A. Ref. 01/525, PL 25.128072 was approximately 100,000 tonnes per annum. An average extraction capacity of 100,000 tonnes is anticipated as part of the proposed development.

The layout largely relates to the logical placement of infrastructure and plant associated with the elements of the process within the area of the site. It is mainly dictated by the commercial imperatives of process efficiency, operational efficiency and cost-efficiency, as well as environmental considerations such as noise, dust, and visual impact. As this is an established quarry with existing infrastructure and stockpiles currently in situ, the layout is largely predetermined. Installation of a new water management system, including settlement ponds and hydrocarbon interceptor, if extending the quarry to depth below the water table is permitted, will afford the opportunity to optimise the site layout, which will be accommodated within the existing quarry footprint.

Design more closely relates to the visual aesthetics of the development, which is less of a consideration in quarries as compared to enduring public buildings or major pieces of infrastructure. Nonetheless, as negative visual impact can be a major environmental aspect associated with such developments, optimising the design alternatives is considered a priority.

Visual impacts can be resolved through a number of design solutions by varying key aspects such as the location, shape, size, orientation, colour, etc. of the facilities. As this is an established quarry, design alternatives are very limited at this point in the life cycle of the development. The main site activity, including processing plant, is sited on the existing quarry floor and as such benefits from screening afforded by the existing quarry faces, perimeter landscaping and intervening vegetation, including copses of mature trees and mature hedgerows. The current practice of using mobile crushing and screening equipment on the quarry floor deep inside the horseshoe-shaped extraction area, as opposed to the more exposed former processing area, mitigates the associated visual and noise impacts.

Conventional drilling and blasting methods will be used in the breaking of quarry rock faces. Extracted rock is loaded by excavator or front-end loader to a mobile crushing and screening plant at the quarry face. The crushing and screening operation comprises primary, secondary and tertiary stages to produce the range of sizes required. The aggregates produced are then stockpiled and subsequently loaded out by a front-end loader to road trucks for transport off site. There are no viable alternatives to this widely used and now conventional method of quarrying.

There are three established strategies for impact mitigation - avoidance, reduction and remedy, and thus it may be possible to mitigate effects in a number of different ways. The EIAR describes the various options and provides an indication of the main reasons for selecting the chosen options, including a comparison of the environmental effects.

3 DESCRIPTION

The description of the whole project development should comprise information on the site, layout, design, size/scale, resource use, waste production, emissions and nuisance, and risk of accidents. It should consider the full life-cycle of these characteristics, as they have the potential to generate different effects at different times and different places, both on- and off-site, from construction through to operation, and in some cases to decommissioning, closure and restoration.

3.1 THE EXISTING SITE

The site is located in the Townland of Deerpark c. 2 km southeast of Castlepollard and c. 13.5 km northwest of Delvin, Co. Westmeath. The quarry is located on the southwest side of, and with direct access onto, the R395 regional road connecting Edgeworthstown, Castlepollard, Collinstown and Delvin.

The site occurs at an elevation of 88 m AOD along the northern boundary and a maximum elevation of 128 m AOD within the site and along the longitudinal axis of the ridge. The surrounding lands are largely agricultural, specifically pasture, with a substantial level of forestry plantation in the wider area. The topography of the region is characterised by a rolling, hilly landform with prominent hills topped with cherty limestone with enclosed lakes and areas of peat deposits.

The quarry comprises disturbed ground in a large, level processing area located in the northern section of the site and a central horseshoe-shaped extraction area driven into the northern end of the limestone ridge. The extraction area is bordered by copses of trees on the flanks of the ridge with grassland atop, which has been stripped of overburden within the area proposed for extraction. The floor of the existing quarry is at c. 88 m AOD.

Castlepollard Quarry is located in an area between Lough Lene and Lough Derravaragh that is characterised by NW-SE oriented ridges and a resulting parallel drainage system. The site occurs in the Inny (Shannon) Sub-Catchment (SC_030), part of the Upper Shannon Catchment (Hydrometric Area 26F). The site is a hill sitting on the landscape and the topography falls on all sides from the hilltop. The site position and surrounding topography is such that the site appears to straddle the catchments of two streams. Each of the streams that drain these small catchment areas flow southwest towards the Yellow (Castlepollard) River, which rises in Collinstown and outfalls into the northern end of Lough Derravaragh. No part of the site is hydrologically connected to Lough Lene. The nearest part of the catchment that drains to Lough Lene is 570 m to the northeast of the site under consideration here.

The surrounding area is typically agricultural land, mostly pasture and forests, with dispersed farmsteads and diffuse, clustered or more rarely ribbon development along roadsides and around villages. The residences in the locality are shown on Figure 4.1.

The quarry is currently permitted under P.A. Ref. 01/525, which was granted for a 15 year period to work the quarry, plus one year for final re-instatement works, unless, prior to the end of the period, planning permission has been granted for its extension for a further period. In December 2017, a five year extension of the permission was approved under Section 42 “Extend Appropriate Period”.

3.2 PROPOSED DEVELOPMENT

The proposed development will consist of the continued use and operation of the existing quarry (permitted under P.A. Ref. 01/525), including deepening of the quarry, along with minor amendments to the permitted quarry layout comprising an extraction area of c. 4 ha within an overall application area of c. 11.4 ha. The development will include provision of new site infrastructure including water management system, wheel wash and other ancillaries. The workable aggregate reserves within the proposed extraction area have been calculated as c. 2 million tonnes. An average extraction capacity of 100,000 tonnes is anticipated over a 20 year extraction life for the proposed development, plus an additional two years to complete final restoration works.

The floor of the existing quarry is at c. 88 m AOD. It is proposed to develop an additional extractive bench to c. 70 m AOD, and the quarry will continue to be worked from the existing quarry area in a southeasterly direction in a series of 14 to 18 m benches between 128 and 70 m AOD (Refer to Figures 3.1 to 3.3).

Deepening the quarry below the current quarry floor to 70m AOD will require a sump with a minimum available volume of 4,454 m^3 to be maintained. Development of the quarry at depth below the current floor will require dewatering and discharge to surface water. Waters will be pumped from the quarry's sump to a settlement tank system via a hydrocarbon interceptor, which will be designed to ensure drop out of any suspended solids prior to discharge from the site. Thus, the development will include upgrading of the Water Management System, while the proposed discharge to surface water will be subject to a licence.

3.3 EXISTENCE OF THE PROJECT

It is proposed to use the existing entrance to the site, which has been serving the quarry development for a number of years. Access to the proposed development is directly onto the R395 Regional Road. It is anticipated that development traffic will be split 50:50 to the northwest and southeast for arrivals and departures. There is a well set-back, splayed, and paved entrance with large heavy-duty lockable metal gates. Sight distances at the site entrance of at least c. 160 m are achievable in both directions along the R395 at a distance of 3 m back from the hard shoulder. To the northwest, the visibility splay is indicated as passing through existing trees and vegetation. These will be cut back and maintained to ensure the required visibility is provided.

A wheelwash will be provided to ensure that the wheels and undersides of all vehicles transporting aggregate from the site onto the public road are cleaned.

Warning signs are displayed at appropriate intervals along the property and excavation boundary. The existing boundaries around the site perimeter will be maintained and will be reinforced, where necessary. The boundaries will be maintained in accordance with the operator's obligations under various health and safety legislation. The access gate is kept padlocked outside of the normal working hours.

3.4 DESCRIPTION OF COMMISSIONING

On some large projects there is a considerable time delay between the end of construction and the commencement of full operation. The presence of the existing quarry means that there is little development works required apart from provision of new site infrastructure including wheel wash and water management system (i.e., quarry sump, settlement tanks and an appropriately sized hydrocarbon interceptor). It is envisaged that these facilities will be commissioned over a 3 to 6 month timeframe.

3.5 OPERATION OF THE PROJECT

The operator has put in place an Environmental Management System (EMS) that will address such matters as Emergency Preparedness & Response in dealing with accident and emergency situations resulting in impacts on the environment. The Environmental Management Plan (EMP) for Castlepollard Quarry includes regular monitoring activities (e.g., Water, Blasting, Noise and Dust) to demonstrate that the development is not having an adverse impact on the surrounding environment.

The proposed quarry working hours are:

Monday to Friday:	07:00 to 18:00 hours.
Saturdays:	07:00 to 14:00 hours
Sundays/Public Holidays	No working except in the case of maintenance or emergency.

It is considered that the proposed development can operate for the proposed working hours and comply with the EPA Recommended General Noise Limit Criteria (For EPA Scheduled Activities (NG4 2016) Daytime Noise Criterion, 55 dB LAr,T (07:00 to 19:00 hrs).

There will be no changes to the method of extraction and processing (crushing, screening, rinsing, etc.) as a result of this planning application. Drilling and blasting will continue to be utilised with processing of extracted rock using mobile crushing and screening plant located within the quarry void. This will reduce handling of material and will also have the benefit of screening these activities from outside views, and being at depth, will also mitigate impacts associated with noise and dust. The broken rock will be excavated by a combination of either a wheeled loading shovel and / or excavator. Blasted material is then transported to a mobile crushing and screening plant, located on the quarry floor, where material is processed into various grades of aggregate depending on market demand and stored in designated stockpiles.

The site will continue to be worked from the existing quarry area in a southeasterly direction in a series of 14 to 18 metre benches between 128 and 70 m AOD. The development will be worked in a phased manner to ensure full implementation of the mitigation and restoration measures proposed. The existing workings have been incorporated into the overall phasing of the scheme to ensure a consistent approach to landscaping and restoration within the entire project area. Plans and sections of the design and associated restoration are shown on Figures 3.1 and 3.3.

Cross sections through the site also illustrate the effectiveness of working the quarry top-down in successive benches, with progressive restoration of the upper back western face to further reduce the visual impact of the development on the surroundings (Refer to Figures 3.1 to 3.3).

All crushing and processing will be carried out on the quarry floor being screened by the quarry face and perimeter screening berms. The working scheme has been phased with consideration given to implementation of landscaping proposals and restoration of worked out areas (in particular the upper quarry face) to further reduce the visual impact of the development on the surroundings.

The crushing and screening operation will consist of primary, secondary, and tertiary stages to produce the range of sizes required including rinsing of aggregates as necessary to provide chips for surface dressing.

There will be no major servicing of plant and machinery carried out on site apart from routine maintenance and running repairs.

There will be no storage of bulk fuels on site. Servicing of vehicles will take place off site. Lubricants and any other hydrocarbons will be stored on spill pallets with containment. Refuelling of mobile plant will be carried out by a licenced third-party contractor. Refuelling of construction vehicles will be carried out on a dedicated hard standing area with runoff to a hydrocarbon interceptor.

An impermeable hardstanding pad is located in the northern part of the site adjacent to the processing area. All hardstanding runoff shall be diverted to the hydrocarbon interceptor for the site, which will also have silt storage capacity, prior to outfall. Runoff from the refuelling hardstanding area will drain by gravity to the hydrocarbon interceptor. The hardstanding is therefore appropriate for refueling of mobile plant (e.g., loading shovel), haulage vehicle(s) and emergency repairs, where necessary. Spill kits will be stored on site. All waste oils will be collected and removed offsite by an approved waste collection contractor in the area.

The current active quarry floor is at 88m OD and it is proposed to deepen this by one bench only and this usually results in an excavation depth of 18m, when access routes and slopes are accounted for. Works will progress, as dry workings, from the current floor in a south-eastern direction towards the site's boundary and the quarry's plan for phased development suggests that it will be over a decade before the final bench will be excavated from the current floor level to the proposed final level of 70m OD.

In order to maintain a dry working environment on the floor of the quarry, some rainfall-runoff and groundwater will need to be discharged from site. Such waters will enter local surface water channels and drainage network. To date, the only waters leaving the site are natural surface overland flows generated by rainfall.

Development of the quarry at depth below the current floor will require dewatering and discharge to surface water, and hence upgrading of the Water Management System. The proposed discharge to surface water will be subject to a licence to discharge to surface water as required under Section 4 of the Local Government (Water Pollution) Act, 1977.

Deepening the quarry below the current quarry floor to 70m AOD will require a sump with a minimum available volume of 4,454 m^3 to be maintained. Waters will be pumped from the quarry's sump to a settlement pond system via a hydrocarbon interceptor, which must be designed to ensure drop out of any suspended solids prior to discharge from the site. In line

with standard practice, discharge surface water should be limited to the pre-quarrying discharge rate to mitigate against downstream flooding.

Relatively small amounts of water will be used for the purpose of process water, as follows:

- dust suppression, in the order of ≤1 m^3/d;
- mobile plant sprinklers for washing of chips of ≤2 m^3/d;
- wheelwash with a top-up water demand will be less than ≤0.5 m^3/d.

Given the nature of site topography any excess water from the above processes shall drain by gravity back to the water management system proposed. The onsite PW3 Well and/or the site's stormwater sump shall provide the waters that do not need to be of potable water quality.

A wheelwash facility will be installed on the site and the roads have sprinkler systems. The site access from the proposed wheelwash to the entrance has been paved with a permeable tarmac surface. Regular sweeping of paved areas including the site entrance will be implemented to reduce the amount of sediment being washed into roadside drainage.

A weighbridge has been provided to ensure that no trucks leaving the site will be overloaded.

The site is supplied by mains water. Additionally, potable water dispensers from bottled water suppliers are supplied at company sites. A septic tank and percolation area were previously installed for wastewater management.

Lagan has appointed a competent quarry manager with the relevant experience of extraction, crushing and screening and haulage of construction aggregates. The site currently employs 1 full-time and 1 part-time staff member and it is not anticipated that these numbers will increase. Indirect employment, i.e., those people who rely directly upon the quarry and the associated business for their incomes, amounts to a further 5 people, e.g., local hauliers and contractors.

3.6 SITE RESTORATION, DECOMMISSIONING & AFTERCARE

The development will be worked in a phased manner to ensure full implementation of the mitigation and restoration measures proposed. Plans and sections of the design and associated restoration are shown on Figures 3.2 to 3.3. Site restoration allows vegetation to become established during the course of the development, thereby reducing the overall impact of the development (i.e., visual impact, dust impact, flora and fauna impact, etc.).

A well-coordinated restoration process in consultation with the Geological Survey of Ireland (GSI) will ensure that representative areas of quarry faces are left unvegetated. Parts of the upper benches will also be seeded with suitable species of shrubs and climbers to create vegetated ledges. Vegetation and natural colonisation on these benches will encourage growth on the faces and will subsequently break up the natural harshness of the exposed rock face.

The main aim of the restoration plan is to minimise the impact of quarrying on the existing landscape of the area, both now and into the future. It is anticipated that final restoration will be achieved within 2 years of completion of extraction operations. Final restoration will be to a beneficial after-use as a secure wildlife amenity with water feature. A detailed restoration and landscaping plan has been prepared as part of the application (Refer to Figure 3.2).

The proposed development will enable the operator to fully complete the restoration of both the existing quarry and the proposed development to beneficial after-use.

Redundant structures, plant equipment and stockpiles will be removed from site on cessation of quarrying activity.

The final site restoration will contain a landscaped woodland / amenity with water feature.

3.7 CHANGES TO THE PROJECT

The proposed development has taken into consideration the application area as a whole. It is considered that given appropriate stand-offs to sensitive receptors within the vicinity that the application area can accommodate the extraction area as proposed. Further development outside of the application area is restricted by the extent of the limestone resource (i.e., the accessible resource), proximity to residential property, visual impact and protection of the copses of trees.

Continuation of quarrying operations in accordance with the scheme proposed will provide for the security of the existing business of Lagan for the full duration of the permission being sought, i.e., 20 years. Castlepollard Quarry is an important component in Lagan's future business model.

3.8 DESCRIPTION OF RELATED PROJECTS

There are no required or apparent opportunities for any further associated developments at this time.

3.9 CUMULATIVE IMPACT

There are no other significant projects, quarries, commercial or industrial facilities in close proximity to the site. As such, it is considered that there is no significant cumulative impact with respect to the operation of the quarry on the area.

4 POPULATION & HUMAN HEALTH

This section of the EIAR establishes the human environment in the vicinity, and assesses the potential impact, if any, of the proposed continued operation of Castlepollard Quarry at Deerpark, Castlepollard, Co. Westmeath, on the existing environment in respect of human beings. Potential negative impacts on human beings and amenity of the area arising from the development relate mainly to nuisance from noise, dust, water pollution, traffic and visual intrusion. The issues considered here include land use, population, economy & employment, social infrastructure, amenity, tourism and recreation and health and safety. The human environment was assessed by undertaking a desktop study and conducting visits to the site and the area.

The site is strategically located immediately adjacent to, and with direct access onto R395 Regional Road, which connects the town of Edgeworthstown 20 km to the northwest to Delvin 13.5 km to the southeast, via Castlepollard and Collinstown. The proposed haulage route for all site-related HGV traffic is thus onto the R395, such that all site traffic will be immediately directed onto the regional road network and avoid adversely impacting the local road network.

Castlepollard Quarry is located in the townland of Deerpark, which is in the Electoral Division (ED) of Kinturk. There are numerous established individual residences, clusters of residences, hamlets or graigs in the area. There are 10 residences within 250 m, 16 within 500 m and 42 within 1 km of the site planning application boundary (Refer to Figure 4.1). There are several clusters of residential dwellings located near the site. A cluster of 6 residences are located within 250 m on the east side of the R395 across from the site entrance and north along the L5743 (i.e., nos. 5-10), while another cluster of 4 residences are located within 250 m west of the site adjacent to the drainage ditch into which it is proposed to discharge surface waters (i.e., nos. 1-4).

There are no occupied residences within the application site, and the closest is located c. 270 m northeast of the quarry extraction area.

There are no community facilities near Deerpark, although there are numerous community and recreational facilities in the nearby villages and towns of Castlepollard, Collinstown, Multyfarnham, Delvin, and Oldcastle. The nearest such facilities are located in the town of Castlepollard c. 2 km northwest of the site. These include two national schools, a community college, a library, one Roman Catholic church, a community centre, five creches or Montessori schools, a nursing home, and a primary health centre. The town hosts County Council Offices, Post Office, Garda Station, Fore Station, Bank of Ireland and a large range of shops and services. Other facilities in the region include community centres and halls, some of which are stand-alone or are associated with local GAA grounds.

Power to local residences is provided by over-head lines. Most residential properties in the area are serviced by mains water supply, although houses in the area are serviced by bored wells. Most houses are serviced by septic tank systems and proprietary effluent treatment systems.

The application site has restricted views from the surrounding countryside, mostly middle distance views from the northeast. No sites of archaeological importance, National Monuments, or protected structures listed in the Westmeath Development Plan 2021-2027 are located within the proposed development area.

The closest concentration of commercial and industrial activities to the site is in the town of Castlepollard c. 2 km to the northwest, particularly at the Innova Business Park, petrol stations and other commercial facilities.

The quarry has contributed indirectly to sustaining and developing the local and regional economy through the supply of building products. If the development did not proceed, the aggregate resource would remain unused in situ, and the local supply of quality aggregates would be more restricted. Terminating the operation of the quarry would miss the opportunity to maintain local jobs in the area, and thus would have a direct negative impact on the local human environment.

As a quarry has been intermittently active at the Deerpark site since the early 1900s, continuation of quarry operations for extraction of aggregate, represents minimal impact in the context of change in land use. The quarry has had a number of mitigation measures with respect to screening and landscaping, environmental management and monitoring put in place to ensure that operations do not result in significant impacts on the surroundings, including the human environment. On completion of site activities, the site of the quarry will be decommissioned and left safe and secure. Furthermore, the quarry will be restored in accordance with an approved restoration scheme, and thus integrated back into the surrounding landscape with the attendant improvement to the visual amenity of the area.

The quarry will directly employ 2 people, while indirect employment, including local hauliers and contractors, will also be generated. It is anticipated that indirect employment, i.e., those people who rely directly upon the quarry and the associated business for their earnings, will amount to a further 5 people. Thus, the development will have a positive impact with respect to supporting and maintaining the workforce in the area for the duration of quarrying activities.

At the quarry access junction on the R395, when travelling to/from the quarry, it is anticipated that development traffic will be split 50:50 to the northwest and southeast for arrivals and departures. As such, site traffic will be able to use the regional and national road networks for the bulk of the journeys to customer sites and thus will likely have negligible impact on local road networks and sensitive receptors. The volume of traffic generated by the proposed development will result in an average daily vehicle flow of 44 vehicles, 32 of which would be HGVs. The traffic impact of the quarry site on the R395 will result in an increase in traffic on the network, but this increase is considered negligible. The existing capacity of the adjacent road network has been shown to comfortably accommodate these minor increases.

There are no major tourism attractions in the immediate vicinity (< 2 km) of the quarry. There are numerous attractions and amenities in northern County Westmeath, but all of these are relatively remote to the quarry, and therefore will not be impacted upon. The site lies just beyond the extreme margin of the Fore Special Heritage Area, despite Fore being located c. 4 km to the northeast of the site on the opposite side of Lough Lene. An intervening ridge line obscures all possible views of the site from the Lough Lene High Amenity area and the monastic complex at Fore.

There has been a long historical association with quarrying at this location and consideration has been given to screening of the development, phasing and direction of working with respect to receptors to reduce visual impact, while impacts due to noise and dust are substantially attenuated.

The quarry does not lie on a designated scenic route, nor is it visible from any of the designated scenic routes and viewpoints within the wider area around Deerpark. The hill into which the development has been driven forms a screen to all views from the south and west. Thus, it is considered that the development will not have any significant visual impact on the views and prospects in the county. Upon decommissioning, the site will be restored in accordance with an approved restoration scheme for the quarry so it is assimilated back into the landscape.

The site has a long history of quarrying having co-existed with other land uses in the area since the early 1900s, such that property values should be unaffected by the continuation of quarrying. Furthermore, consideration has been given to screening of the development, phasing and direction of working with respect to receptors.

There are no Sevesso II upper tier establishment in County Westmeath, while there is one lower tier establishment, namely Ecolab Ltd., Mullingar Industrial Estate, Mullingar, c. 17.5 km to the southwest. It is considered that at such a stand-off distance, the Castlepollard Quarry is not at risk of such accidents. Furthermore, the quarry lies in a sparsely populated, rural area, where the nearest industrial development is the Decotek Automotive manufacturing facility c. 5 km to the southeast near Collinstown, indicating that the site is not vulnerable to major accidents or disasters. The greater risk of accident probably arises from the nature of the quarrying activities on-site. However, the design, construction and operation of the proposed development will be carried out in accordance with all relevant Irish and European legislation/regulations governing safety in the workplace. A 'Health & Safety Plan' has been implemented for the development in accordance with the regulations.

There are no recorded archaeological, architectural or cultural heritage features within the area of land take. There will be no direct impacts on any known items of archaeology, cultural heritage or buildings of heritage or special architectural interest in the application area or the vicinity. The impact of extraction will not result in any significant loss of heritage values in the locality. In the medium to long term, the site will be restored in accordance with an approved restoration scheme for the quarry.

There are no significant projects, quarries, commercial or industrial facilities in close proximity to the site. There will be no significant indirect, cumulative or transboundary impacts associated with the operation of the quarry. Also, based on the mitigation measures provided for, there will be no significant residual impacts in terms of community and other socio-economic issues.

Consideration was given to the protection of biodiversity values and screening, as well as progressive restoration and final restoration of the quarry site once operations at the site cease.

A Hydrological survey of receiving waters capacity suggests that the proposed discharge rate can be accommodated with no risk of flooding.

Various mitigation measures will be implemented to minimise any impacts as much as practical to ensure the operation of the quarry will not result in any significant impact on residences or local amenities.

With regard to human beings, there are no mitigations proposed beyond normal site management including phasing and site restoration of the quarry. Any impact on the natural environment will be mitigated against to the greatest degree practical, thereby minimising any

associated impact on the "human" environment. The mitigation measures that relate to the human environment, and sensitive receptors in particular, mainly involve water, air, noise and vibration, landscape and traffic.

The applicant, Lagan, has established an environmental monitoring programme for the quarry site. The programme allows for on-going monitoring of environmental emissions (e.g., noise, dust, blasting, water) from the site, thereby assisting in ensuring compliance with requirements or regulations.

The development will be controlled and regularised in accordance with the scheme as outlined in this document, through continued environmental monitoring and by planning conditions imposed by the competent authority. The proposal will have no major and/or long-term effect on the human environment.

It is the policy of the operator to ensure the health and welfare of its employees by maintaining a safe, clean and tidy working environment, and employing safe working procedures that accord with the requirements of employment legislation, regulations, and best work practices in the industry. Access to the site has and will be restricted at all times, and all visitors and contractors will undergo a site induction before entering the site. The wearing of protective clothing such as footwear, helmets and high visibility clothing will be mandatory in operational areas.

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

5 BIODIVERSITY

This section of the EIAR provides an assessment of the impacts of the proposed development in question on the ecological environment, i.e., flora and fauna. The subject site is located at Castlepollard Quarry, Deerpark, Castlepollard, Co Westmeath.

Guidance on Appropriate Assessment recommends an assessment of European sites within a Zone of Influence (ZoI) of 15 km. However, a ZoI of a proposed development is the geographical area over which it could affect the receiving environment in a way that could have significant effects on the Qualifying Interests of a European site. This should be established on a case-by-case basis using the Source-Pathway-Receptor framework. The two European sites within the ZoI of the Proposed Development are Lough Lene SAC (Site Code 002121) in the Boyne Catchment and Lough Derravarragh SPA (004043) in the Upper Shannon Catchment, which are located 1.18 km and 4.00 km, respectively from the proposed development.

The aspects of the proposed development that are of particular relevance to biodiversity are:

- Potential effects on water quality in terms of connectivity with the European site located downstream, i.e., the Lough Derravarragh SPA (Site Code 0004043).

The Appropriate Assessment (AA) process was undertaken by Moore Group for the proposed development and a Report for AA Screening and Natura Impact Statement (NIS) are presented as separate documents as part of the Planning application (Refer to EIAR Appendices 8 & 9, respectively).

The habitat survey was carried out firstly through desktop research to determine existing records in relation to habitats and species present in the study areas. The second phase of the survey involved a site visit to establish the existing environment in the footprint of the proposed development area. The final part of the site assessment involved an evaluation of the study area and determination of the potential impacts on the habitats of the study area. This part of the assessment formed the basis for the Impact Assessment.

The quarry habitats are best identified on the site layout map in Figure 5.3, where the woodland/scrub mosaic areas are identified and the worked quarry areas are shown in grey. The quarry habitats were identified as worked quarry areas and woodland/scrub mosaic areas. Dry calcareous and neutral unimproved or semi-improved dry grassland is found in scattered patches on the application site and along linear features such as the access tracks to the north and south.

There are two remnant areas of mixed broadleaved woodland and scrub mosaic located on the verges of the main quarry area The dominant species are ash and hazel, with hawthorn, blackthorn, holly, willow, ivy, bramble and gorse. The ground flora below is typically poor in denser areas.

Patches of scrub are found interspersed with areas of woodland. Other species present in areas of scrub include bramble, bracken and hawthorn. An area of more dense bracken is found in the southeastern part of the site where the track rises to the upper level of the quarry. The ground flora beneath this scrub is poor and restricted to shade-tolerant species such as bracken, ivy, bramble and occasional hart's-tongue fern.

A topographically enclosed depression along the eastern boundary contains water and is referred to locally as the marsh. Historical OS maps indicate that this is a legacy of gravel extraction in the 1900's. Before the site's development, runoff from this marshy pond was diverted northwards, ultimately entering the Castlepollard Stream. During the Hydrology site walkover, it was confirmed that this northern outlet ditch is now redundant. The area corresponds to wet willow-alder-ash woodland and is outside the boundary and hydrology of the proposed development.

Recolonising of bare ground is associated with areas along the northern boundary of the site and at the quarry entrance. The majority of the site is dominated by a worked quarry, where limestone is extracted, crushed and processed. The nature of this activity means a high level of disturbance, which prevents the colonisation of this area of the site by vegetation.

A night time bat detector survey of the site recorded three contacts from one species of bat: Leisler's bats (Nyctalus leisleri) calls were heard from the woodland area to the north.

In respect of badgers, no specific feeding signs or setts were found within the quarry site boundary and the soils present tend to be either waterlogged or very thin over the underlying rock. There are no suitable habitats for otters on the proposed development site and no signs of otter were recorded within the site. Potential impacts on otters are considered under indirect impacts on water quality downstream.

Birds recorded during the site visit were typical of the wider countryside, although a single Peregrine Falcon was recorded nesting on the cliff face of the northwestern area of the site.

The proposed development is located within the hydrological catchment of two streams. The Castlepollard Stream is the northernmost of the streams in the vicinity of the site and contains Castlepollard village within its catchment. The Castlepollard Stream outfalls to the Yellow River c. 2.6 km west of the site. The Deerpark Stream is a small stream / drainage channel that connects the northwestern corner of the site to the Yellow (Castlepollard)_030. The Deerpark Stream joins the Yellow (Castlepollard)_030 at a distance of almost 400 m from the site. The marshy pond to the east of the quarry reaches the northwestern corner of the site by overflow through an underground 300 mm diameter culvert that traverses the northern part of the site, where a steep sided drain transmits waters to the Deerpark Stream.

Downstream, the waters of these two streams enter the Yellow River which in turns flows west into Lough Derravaragh and its SPA, which is located c. 4 km west of the proposed development and c. 7 river km downstream of the quarry discharge point. The most recent EPA Biological Water Quality results from the closest station to the site, 3 km downstream on the Yellow River, persistently returns Q Ratings of 4, indicating Good Ecological Status.

There are no rare or protected habitats recorded in the study area inside the site boundary. The site may be considered of Low to Moderate Ecological Value at a local level.

The main anticipated impact in relation to Biodiversity associated with the proposed quarry development relates to the potential risk posed to surface water and aquatic receptors.

The site does not contain items of particular ecological interest at present but the successional stage of open scrub that occurs within the worked-out areas of the quarry has a positive biodiversity value in such agricultural surroundings.

There will be no significant change to the quarry habitats from the continued working of the quarry. The quarry base and surrounding upper levels comprise areas of bedrock that have been prepared for quarrying with no predicted significant effects on footprint habitats. The predicted direct effect on footprint habitats is neutral, imperceptible and permanent.

The surrounding woodland/scrub mosaic will continue to be managed as part of the quarry operation with similar levels of maintenance of tracks and access areas. The predicted direct effect on surrounding habitats is neutral, imperceptible and long term.

There are no roosting habitats for bats in the footprint of the proposed development and there are no predicted direct effects on bats. There will be no direct effects on badgers as a result of the proposed development. There will be no direct effects on otters as a result of the proposed development.

Birds recorded during the site visit were typical of the wider countryside. There will be some minor removal of scrub vegetation along the southwestern boundary to open up the quarry extraction area. Potential impacts on nesting birds will be avoided by appropriate timing of this activity. The single Peregrine Falcon recorded nesting on the cliff face of the northwestern area of the site will not be affected by the proposed development. Site data from another quarry, in full operation and undergoing regular blasting by the applicant, has shown that nesting peregrines have successfully raised and fledged a chick in 2021.

In the absence of mitigation, a significant discharge of silt laden water could have a significant effect on otter habitats or prey availability. The proposed development includes specific measures for the attenuation and discharge to surface waters and there will be no indirect impacts on water quality or otters as a result of the proposed development.

In the absence of mitigation, a significant discharge of silt laden water could have a significant effect on bird habitats or recruitment in Lough Derravaragh. The proposed development includes specific measures for the attenuation and discharge of surface water and there will be no indirect effects on birds or wetland habitats as a result of the proposed development.

The absence of any other significant projects, including extractive, commercial or industrial developments, within c. 3 km of Deerpark renders the likelihood of significant negative cumulative impacts on the Biodiversity of the area highly improbable.

Based on the mitigation measures provided for during the operational phase, there will be no significant residual impacts envisaged in terms of biodiversity. On completion of the full restoration and closure of the site, it is expected that there will not be any significant, long-term, adverse impacts.

The main risk associated with the proposed development for the existing quarry, is the potential adverse impact it could have on receiving surface and groundwaters. The ultimate downstream receptor is the Lough Derravaragh SPA.

The quarry water discharge will be of a quality that will not impact water quality downstream. The emission limits proposed for the site are better quality for suspended solids than currently exists in the natural environment receiving the water. The ability of the receiving waters to accept and assimilate the envisaged discharge suggest no potential for impact and no special measures are required other than those associated with all quarries, which are the appropriately specified floor sump, settlement tanks and a Discharge Licence.

The Natura Impact Assessment (NIS) reviewed the predicted impacts arising from the project and found that with the implementation of appropriate mitigation measures specifically with regard to surface water, significant effects on the integrity of the Lough Derravarragh SPA can be ruled out.

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

There are no predicted adverse effects on local or downstream biodiversity, flora or fauna as a result of the proposed development given the inclusion of workable industry standard mitigation measures that will be monitored to ensure continued efficacy.

6 LAND, SOILS & GEOLOGY

The potential impacts of the proposed continuance of quarry operations at Castlepollard Quarry, Deerpark, Castlepollard, Co. Westmeath, on the geological environment is assessed and possible mitigation measures proposed to reduce any significant impacts. The quarry has been a feature of these lands since the early 1900s.

The desk study was undertaken to compile, review and interpret available information, data and literature pertaining principally to the geological and soil environment of the site, its immediate environs and regional setting. Site specific geophysical data were acquired from a report by Apex Geophysics in 2018.

The field survey consisted of a site walkover on 7th April 2021 and 31st May 2021 to assess the geology of the site and record all significant geological features. The exposed limestone deposits in the quarry were examined during the site walkover and are described below. Aspects of the desk-based assessment were verified, and geological descriptions and photographs of the geological features were recorded. The site walkover included a visual examination of the quarry faces as part of this geological assessment.

In the Deerpark area, the overburden consists dominantly of glacial Till derived from Cherts (TCh), with lesser amounts of subcropping rock (Rck). The topsoil on-site is underlain by subcropping bedrock with negligible glacial overburden.

The bedrock of the area consists of the Derravaragh Cherts Formation enclosed by limestones of the Lucan Formation ("The Calp") with minor areas of mudbank limestone to the northwest. The Calp lies c. 2 km to the northwest at its nearest to the site.

The Derravaragh Chert Formation consists of unfossiliferous, dark grey, gently dipping, thinly-bedded calcsilicates and limestones with thin shales. It is composed mainly of chert with thin calcareous siltstones, limestones and rare shale interbeds. The formation is differentiated from the underlying Lucan Formation on the basis of the greater amount of chert.

The Derravaragh Cherts cover 147 km^2, is estimated to be 200 m thick, and is defined by the Geological Survey of Ireland (GSI) as a Locally Important Aquifer – Karstified (Lk). In respect of public and private water supply schemes, there are no Source Protection Zones within c. 6.5 km of the site (i.e., nearest source protection zone is Multifarnham GWS). Because the Derravaragh Cherts underly the entire site, and is a locally important aquifer, the sensitivity of the geological and groundwater interest of the site is determined to be high.

There are approximately 30 to 35 m of limestone beds exposed in the quarry. The ridge into which the quarry has been developed had a soil cover of 10-30 cm, while the slope of the ridge conforms with the dips of the beds in the quarry, i.e., to the southeast.

The saleable aggregate reserves within the proposed extraction area have been calculated as c. 2 million tonnes following a geophysical survey by Apex Geophysics. The average annual output will be in the order of 100,000 tonnes over an anticipated duration for the extraction of c. 20 years.

A search of the GSI Geological Heritage Database reveals that there are several sites of geological interest in the wider area, including the Castlepollard Quarry itself, which the GSI referred to as the Deerpark Quarry and which they designated a County Geological Site

(CGS). The site is designated under two Irish Geological Heritage (IGH) themes, primarily IGH8 (Lower Carboniferous) and secondarily IGH15 (Economic Geology) and may be recommended for Geological NHA. CGSs do not receive statutory protection like Natural Heritage Areas (NHA) but receive an effective protection from their inclusion in the planning system, which should ensure that they are not inadvertently damaged or destroyed through lack of awareness.

An audit of the Geological Heritage of County Westmeath was carried out in 2019, which identified 28 County Geological Sites (CGS) in the county. In its 2021-2027 County Development Plan (CPD), the Council recognizes these areas of conservation value, which include a number of geological and geomorphological sites. There are seven such sites of geological interest near the application site (<7.5 km). There are no pathways by which the quarry at Castlepollard Quarry can impact the other sites, other than possibly by water, as discharge of waters to the tributary of the Yellow River will result in its flow into the Lough Derravaragh CGS.

The CGS Site report for the Deerpark Quarry notes that the *"geological heritage interest relies on continued working of the quarry as a place to see the strata that is exposes"*. Because the limestone itself is the feature of interest, and not any particular location within the quarry, continued extraction will not destroy the feature of interest but rather increase exposure.

In respect of Land, Soils and Geology, the land, soils and geological heritage in the area potentially represent sensitive receptors. No additional land take is envisaged as part of the proposed development, and thus no further lands will be directly impacted. The soils on-site have been stripped to gain access to the underlying limestones and have been used for perimeter screening berms or placed in long-term storage for subsequent use in restoration. Soil stripping was carried out in accordance with the principles of good soil handling. The storage areas and restoration areas have been vegetated to reduce visual impact and erosion.

If the development did not proceed, the aggregate resource would remain unused in situ, and the local supply of quality aggregates would be more restricted. The site would be restored to beneficial after-use as per the requirements of the existing planning permission (P.A. Ref. 01/525). However, the resources of the quarry would remain in situ and thus unutilised, and would possibly result in the requirement to develop a more remote greenfield site.

There is a moderate, but controlled impact due to the removal of the resource during the operation. To date, the excavations in bedrock involved excavations in a delineated benched area. The impact of excavations to date at the quarry would be considered as negative with moderate significance and of long-term duration.

The development will have no indirect impact on the local or regional geology, as no contaminants will be released onto the lands, and dust emissions will be tightly controlled. There are no other projects, quarries, commercial or industrial facilities in close proximity to the site. As such, it is considered there are no significant cumulative impacts with respect to the operation of the quarry.

Given the location (c. 50 km from the border with N. Ireland), nature, size and scale of the proposed development, it is expected that the impacts of the development will not have any significant transboundary impacts on land, soils or geology.

As a result of the proposed mitigation and enhancement measures incorporated in the design, no significant, long-term, adverse residual impacts are predicted in terms of Land, Soils and Geology during the operational phase, although the potential for exposing features of geoheritage interest represents a potential positive impact.

The impact of the development on the geological heritage of the site was assessed with reference to the consultation with the GSI and to the "Geological Heritage Guidelines for the Extractive Industry" developed by the GSI and the Irish Concrete Federation (GSI/ICF 2008).

The GSI have requested that the operator might assist their geological heritage goals with the following (and ideally this would be written into the restoration / closure plan) and be included as a condition of planning as deemed appropriate by the planning authority:

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

Should any significant bedrock exposures of importance be identified, Lagan will work with the GSI to find a mutually beneficial arrangement on how best they can be designed to remain visible as rock exposure rather than covered with soil and vegetated, in accordance with safety guidelines and engineering constraints. This measure would permit on-going improvement of geological knowledge of the subsurface and could be included as additional sites of the geoheritage dataset, if appropriate.

The final land restoration scheme will ultimately allow the site to be returned to a condition whereby there will be negligible residual impact on the surrounding environment due to the extraction and removal of the limestone bedrock underlying the site. It is planned to minimise, eliminate or decrease long-term ecological and visual impacts on the environment through the implementation of the final restoration scheme.

It is anticipated that final restoration will be achieved within 2 years of completion of extraction operations. Final restoration will be to a beneficial after-use as a secure wildlife amenity with water feature. A detailed Restoration and landscaping plan has been prepared as part of the application (Refer to Figure 3.2).

A well-coordinated restoration process (in consultation with the IGH) will ensure that representative areas of quarry faces are left unvegetated. Parts of the upper benches will also be seeded with suitable species of shrubs and climbers to create vegetated ledges. Vegetation and natural colonisation on these benches will encourage growth on the faces and will subsequently break up the natural harshness of the exposed rock face.

The final land restoration scheme will ultimately allow the site to be returned to a condition whereby there will be negligible residual impact on the surrounding environment due to the extraction and removal of the limestone bedrock underlying the site. It is planned to minimise,

eliminate or decrease long-term ecological and visual impacts on the environment through the implementation of the landscaping & restoration scheme.

It is considered that the exact detail with respect to final treatment of quarry should be left to at least 6 months prior to final restoration to facilitate future beneficial end use. A typical planning condition to this effect could be "The developer shall confirm in writing with the planning authority within 6 months of the cessation of operations, the details of, and programme for, implementation of the restoration scheme upon permanent cessation of quarrying activity at the site".

7 WATER

This section of the EIAR assesses the impact on the hydrological and hydrogeological environment of the proposed continuation of rock quarrying at an existing at an existing limestone quarry at Deerpark, Castlepollard, Co. Westmeath.

In the course of this assessment, we have considered and integrated information relating to the region, local area and site, as follows:

- Desk study;
- Site walkover and local area visual survey;
- Site investigations including piezometer installations with continuous water level data loggers, drilling of large diameter wells for aquifer pumping tests, groundwater and surface water quality sampling for hydrochemical evaluations, groundwater and surface water level recording, flow measurements and cross-sectional survey of receiving survey waters, and
- Data analysis including quantification of aquifer characteristics to inform potential future dewatering requirements, establishment of groundwater and surface water level and flow regimes, design specifications for effective mitigation measures, e.g., settlement pond/tank system, determination of hydraulic capacity of receiving waters, determination of chemical status of receiving waters and ability to assimilate discharge waters.

The entire site is within the Derravaragh Groundwater Body (GWB), the report of which (GSI, 2004) suggests that the hydrogeological regime of the area is influenced by steep-sided hills.

In order to maintain a dry working environment on the floor of the quarry, some rainfall-runoff and groundwater will need to be discharged from site. Such waters will enter local surface water channels and drainage network. In terms of local hydrology, the Water Framework Directive (WFD) sub catchments delineate a surface water divide running broadly northwest-southeast a short distance north of the site. Lands south of this divide, including the application site, drain naturally to the Inny (Shannon) SC_030, whereas lands to the north drain to the Deel (Raharney) SC_010.

Waters leaving the site will enter a tributary of the Yellow River (Castlepollard) in an afforested area to the south. The Yellow River outfalls to Lough Derravaragh Natural Heritage Area (NHA Site Code 000684) and Special Protection Area (SPA Site Code 004043). Lough Derravaragh's primary inflow and outflow mechanisms are controlled by the River Inny, which itself outfalls to the River Shannon when entering Lough Ree Special Area of Conservation (SAC Site Code 000440), SPA (004064), proposed NHA (000440), near Ballymahon. The significance of the hydrological and hydrogeological setting is therefore acknowledged.

There is currently no pumped discharge of waters from the site as the quarry is worked dry and therefore no discharge license is required to regulate groundwater and/or surface waters at the site. This assessment will evaluate potential impacts from proposed works to the hydrological and hydrogeological regimes and will address the necessity or otherwise to submit a discharge licence application to Westmeath County Council.

To date, the only waters leaving the site are natural surface overland flows generated by rainfall. At present, there is no groundwater component to the site. A surface water

management system has been designed with cognisance of the relevant national assessment guidelines and Regulations, namely the Groundwater Regulations (2010, as amended 2011, 2012, 2016), Surface Water Regulations (2009, as amended 2019) and Birds and Natural Habitats Regulations (2011).

There are no public drinking water sources at risk of impact from the proposed development. A third party well survey of properties within 500 m of the application site was performed to identify any potential groundwater receptors at risk of impact due to proposed development works.

The GSI maps the site as being underlain by the Derravagh Groundwater Body (GWB) which is mapped as Good Status but At Risk. The primary pressure affecting the groundwater risk classification is agriculture.

Groundwater vulnerability for that part of the site within which extraction is proposed is mapped by the GSI as Extreme (X) and Extreme (E) due to the occurrence of rock at or near surface. Due to the nature of quarrying, which requires removal of overburden, the groundwater vulnerability rating at all quarry sites will be extreme.

Both Lough Lene and Lough Derravaragh are denoted as designated sites. No part of the site is hydrologically connected to Lough Lene. The nearest part of the catchment that drains to Lough Lene is 570 m to the northeast of the site under consideration here.

The wetland just east of the active quarry is not considered to be a wetland of county value for biodiversity (Westmeath County Council 2020), nor is it a designated area.

The OPW database does not contain any historical records of flood events having occurred on the Yellow River or any of its tributaries. No risk of flooding is predicted in the site-specific model developed for the site.

A third party well survey was carried out by visiting all properties within 600 m of the application site during October 2021. Of the 11 houses visited, all were confirmed to be connected to the Irish Water mains network and did not abstract from a well source. A piggery 300 m to the south was also confirmed as being connected to the Irish Water mains network.

Two large diameter 'Production Wells' (PWs) were drilled in April 2021 for the purposes of a hydraulic evaluation of the underlying bedrock below the proposed floor level. The hydrogeological information gathered from the conventional well drilling and testing was used to calculate likely future water management volumes arising at the site. The PWs were drilled to a target depth of 21 m to ensure the well base would be below the proposed final floor level, which is proposed to be 70 mOD. An additional large diameter well was drilled in August 2021 (PW3).

Three small diameter monitoring wells (MWs) were drilled between 19 and 24th April 2021 for the purposes of a hydraulic evaluation, long-term groundwater level monitoring and groundwater quality monitoring points. Borehole locations are shown in Figure 1.3.

A survey of recently installed on-site groundwater monitoring points shows groundwater flow direction is north-northwest from the hilltop. The upgradient groundwater catchment is negligible.

Surface water elevations suggest that the water contained within the adjacent marshy area to the east is not hydraulically connected to groundwater in the area and represents a perched

surface water system independent of the surrounding hydrogeological regime. This is presumably a result of the thick lacustrine clay layer between the active extraction area and the marshy pond which acts as a confining layer and provides a hydraulic barrier to groundwater flow.

The rock at this site is described as tight and hard and as confirmed through drilling there is little ability for water to move and flow through it.

Site investigations for PWs, MWs and the aquifer testing completed suggests low permeability and potentially low water volumes requiring water management in the future at this site. As the current quarry floor has not intersected groundwater there has been no previous dewatering at the site.

The current active quarry floor is at 88m OD and it is proposed to deepen this by one bench only and this usually results in an excavation depth of 18m, when access routes and slopes are accounted for. This will bring the floor to a future elevation to 70m OD. Works will progress, as dry workings, from the current floor in a south-eastern direction towards the site's boundary and the quarry's plan for phased development suggests that it will be the latter part of the expected 20 year quarry life before the final bench will be excavated from the current floor level to the proposed final level of 70m OD.

The locally important bedrock aquifer is unconfined where rock is at or close to surface, *i.e.,* the central and southern area. The boulder clays covering lower ground may confine groundwater in the underlying bedrock aquifer and the subsoils also appear to restrict hydraulic connectivity between groundwater in the bedrock aquifer and surface water in the adjacent marshy pond area to the east of the working area. The site is devoid of karst features.

The final radius of influence of future dewatering is calculated to be 30m from the edge of the excavation and this will not impact local wells because there are none. Neither will it affect the saturated marshy pond between the quarry and the road because that area is perched above the quarry on a bed of clay and therefore hydraulically disconnected from the groundwater regime at the site.

Hydraulic modelling of the surface water system, based on cross sections and surveying, has demonstrated that the local area's surface water network can accommodate the envisaged dewatering amounts, in combination with flood flows and allowances for climate change.

With respect to surface water monitoring, surface water in the receiving Castlepollard Stream complies with Environmental Quality Objectives of the Surface Water Regulations (2009, as amended). Our experience and conceptual understanding of catchment hydrology is that surface waters close to quarries can be of higher quality than those surface waters in proximity to agroforestry and livestock grazing systems. This is supported by the WFD characterisation of the Castlepollard Stream, downstream of the site, being classified as 'At Risk' from agricultural sources.

With respect to groundwater quality, which will contribute some of the site's discharge volume, in addition to rain falling on the site, the groundwater underlying the site contains no hydrocarbons, the groundwater is pure and all the pure bedrock borehole nutrients comply with the requirements of the Groundwater Regulation Threshold Values (2010, as amended).

Deepening the quarry below the current quarry floor to 70m AOD will require a sump with a minimum available volume of 4,454 m^3 to be maintained. Waters will be pumped from the quarry's sump to a settlement tank system via a hydrocarbon interceptor, which must be designed to ensure drop out of any suspended solids prior to discharge from the site.

In line with standard practice, discharge surface water should be limited to the pre-quarrying discharge rate to mitigate against downstream flooding.

The development will include upgrading of the Water Management System. Development of the quarry at depth below the current floor will require dewatering and discharge to surface water. The proposed discharge to surface water will be subject to a licence to discharge to surface water as required under Section 4 of the Local Government (Water Pollution) Act, 1977. The Water Management Plan is presented in EIAR Section 7.0 and includes design specifications for settlement tanks and mechanisms of discharge, and an appropriately sized hydrocarbon interceptor.

Relatively small amounts of water will be used for the purpose of process water, as follows:

- dust suppression, in the order of ≤1 m^3/d;
- mobile plant sprinklers for washing of chips of ≤2 m^3/d;
- wheelwash with a top-up water demand will be less than ≤0.5 m^3/d.

The process water can be sourced from the sump. Given the nature of site topography any excess water from the above processes shall drain by gravity back to the water management system proposed.

There will be no bulk fuels stored on-site. Servicing of vehicles will take place off site. Lubricants and any other hydrocarbons will be stored on spill pallets with containment. All hydrocarbons will be handled and stored in accordance with the Environmental Management Guidelines - Environmental Management in the Extractive Industry (Non-Scheduled Minerals) (EPA 2006). Refueling of mobile plant will be carried out entirely by a licensed third party using a double-skinned mobile bowser/road tanker which will be mobilised to site on an as needs basis. As a result, there will be no storage of any fuels onsite. Refuelling of construction vehicles will be carried out on a dedicated hard standing area with runoff to a hydrocarbon interceptor.

With respect to dust suppression and any spray waters in the conveyor belts of the crushers/screening units, the onsite PW3 and/or the site's stormwater sump shall provide the waters that do not need to be of potable water quality.

A wheel wash facility will be installed on the site and the roads have sprinkler systems. The site access from the proposed wheelwash to the entrance has been paved with a permeable tarmac surface. Regular sweeping of paved areas including the site entrance will be implemented to reduce the amount of sediment being washed into roadside drainage.

The site is supplied by mains water. Additionally, potable water dispensers from bottled water suppliers are supplied to site. Welfare facilities are available at the site. A septic tank and percolation area were previously installed for wastewater management.

The site is not hydrologically connected to Lough Lene SAC. Therefore, no potential for impact exists. The site is upgradient of Lough Derravaragh SPA and proposals for the site account for the requirement to limit the release of sediment from the site. In that regard, published

catchment information and site investigation results were employed to ultimately define appropriate Emission Limit Values for the site's discharge in order to result in no change in the receiving water's hydrochemical quality, assist efforts to improve the water's status to the required WFD Good Status and ensure full compliance with the Surface Water Regulations.

A Monitoring Programme is proposed for both Surface Water and Groundwater.

All potential impacts have been assessed—the potential impact of blasting has been quantitively assessed, as has the potential impact of dewatering on the underlying aquifer and groundwater body. Mitigation measures have been specified. Residual impacts have been clearly outlined, and none are envisaged. No other quarry nor other developments are within a significant distance to affect a cumulative impact.

There are no Water Environment impediments to the proposed further development of the quarry at Deerpark, Castlepollard, Co Westmeath, which will include one further bench below the current floor level of 88m OD to a future proposed floor elevation of 70m OD.

8 CLIMATE

This section of the EIAR addresses the issues related to climate for the proposed development at Castlepollard Quarry, Deerpark, Castlepollard, Co. Westmeath, and its impact on the climate of the application site and its environs as a result of the activities being undertaken. It involves an assessment of the prevailing climatic conditions and assesses the potential impact of the development on the latter.

There is no guidance on the general climate other than, in respect of EIARs, the EPA's 2015 Draft Advice Notes for Preparing an Environmental Impact Statement.

The study of climate in respect of the proposed development was entirely a desktop study, involving the compilation and analysis of data and information on weather, climate, climate change, and impact of, and vulnerability to, climate change.

The closest synoptic station where the average potential evapotranspiration (PE) is recorded is at Mullingar c. 15.5 km to the south of the site. The 30-year annual average rainfall (AAR) recorded at Mullingar is given as 941.3 mm/yr. Met Éireann's long-term average PE for this station is 499.0 mm/yr. This value is used as a best estimate of the site PE. Actual Evaporation (AE) at the site is estimated as 474.1 mm/yr (which is 0.95 x PE). The effective rainfall (ER) represents the water available for runoff and groundwater recharge. The ER for the site is calculated as the AAR – AE (i.e., 8941.3 – 474.1), which gives a value of 467.2 mm/year.

The average daily air temperatures at Mullingar (1979-2008) range from 4.5℃ to 15.2℃, with a mean 9.3℃. These values can be considered comparable to those expected at the application site.

The prevailing winds in this area are from the southwest and west as illustrated by the wind rose for the synoptic weather station at Mullingar.

There is a low risk of pluvial flooding (i.e., rainfall ponding) at the site as rainfall landing in the quarry that is collected as surface water run-off will be managed through the settlement pond/tank system prior to discharge to an external watercourse.

It is anticipated that the proposed development will operate at a rate consistent with historical trends, i.e., c.100,000 tpa over an anticipated duration for the extraction of c. 20 years. A quarry of this magnitude would be considered to be a small size scale of operation and is expected to have Greenhouse Gas (GHG) emissions of a commensurate scale.

It is expected that climate change will increasingly impact on Ireland over the coming decades. The most immediate risks to Ireland are mainly those associated with changes in extremes such as floods, precipitation and storms. The impact of climate change at Castlepollard is likely to manifest as more intense storms and rainfall events, as well as increased likelihood and magnitude of flooding.

The site's receiving surface water environment has been tested for its hydrological ability to accept the discharge and no flood effects are envisaged. Hydraulic modelling of the surface water system has demonstrated that the local area's surface water network can accommodate the envisaged dewatering amounts, in combination with flood flows and allowances for climate change.

If the proposed development is not granted planning permission, local demand for road aggregate may require materials to be transported from further afield, with a consequential impact in terms of increased vehicular exhaust emissions. It is considered that failure to continue the quarry will nonetheless have an imperceptible, negative impact with respect to climate.

The scale of the operation under planning permission P.A. Ref. 01/525, PL 25.128072 was approximately 100,000 tonnes per annum. An average extraction capacity of 100,000 tonnes per annum is anticipated as part of the proposed development. A quarry of this magnitude would be considered to be a small size scale of operation and an imperceptible negative medium to long-term impact with respect to regional or local climatic conditions.

GHG emissions from plant and machinery at the Castlepollard Quarry will represent approximately 0.0005 % of Ireland's national carbon budget, which is a medium- to long-term, imperceptible impact in terms of Ireland's contribution to climate change.

The absence of large scale commercial and industrial developments within 3 km of the quarry negates any significant cumulative impact on the climate or climate change.

As a result of the proposed mitigation and enhancement measures incorporated in the design, no significant, long-term, adverse residual impacts are predicted in terms of Climate during the operational phase. Furthermore, it is considered that following restoration of the site, there will be an imperceptible, positive impact with respect to Climate due to restoration of the lands to a wildlife amenity.

As the development is not expected to affect the local climate or microclimate of the area, there is no requirement for mitigation or monitoring within this development proposal in respect of climatic issues. Therefore, there are no mitigations proposed specifically with regard to the climate. The proposed development will ultimately lead to the restoration of the quarry lands to a wildlife amenity, which will generate no further emissions from fossil fuels or dust, further lessening any impact on the climate.

The applicant, Lagan Materials Ltd. (Lagan), have implemented an Energy and Carbon Policy, which has been developed by Breedon Group plc, Lagan's parent company. This policy commits to operating in a manner that ultimately eliminates its contribution to global warming by mitigation of climate change impacts through industrial innovation and the application of industry best practice.

9 AIR QUALITY

This section of the EIAR deals with the issue of air quality associated with the proposed development at Deerpark.

The baseline study comprised a desktop review of:

- Relevant policy, legislation and guidance with respect to air quality and emissions;
- Existing dust monitoring results were analysed to evaluate the current air quality conditions; and
- Impact of the development on the existing air quality of the area.

Baseline dust monitoring was carried out at the site using a Bergerhoff dust deposition gauge. The method of measurement is the German Standard VDI 2119 specified in the "Technical Instructions on Air Quality Control – TA Luft of 1986.If the development is not permitted, local demand for road aggregate may require materials to be transported from further afield, with a consequential impact in terms of increased vehicular exhaust emissions.

This is an established well developed quarry and as such the working face has already been developed/exposed within the central portion of the site. The mobile crushing and screening plant will be located centrally within the existing excavation, relocating periodically as the working face is developed to the southeast.

As an existing quarry with most of its infrastructure in-situ, only a brief construction phase is envisaged. It is considered that any direct impact with respect to emissions to air will be slight, occasional, negative due to construction works.

The impacts of any dust deposition from the quarry operations will be direct, slight, occasional, negative largely confined to the site area. Various mitigation measures will be implemented to minimise any impacts as much as practical to ensure the operation of the quarry will not result in any significant impact on residences or local amenities.

Dust monitoring will be carried out in accordance with and within the recognised TA Luft dust deposition limit value of 350 mg/m^2 per day. Despite the low level of activity, the quarry is proposing a very robust mitigation regime, which is fully compliant with best practice in Ireland including the Department of the Environment, Heritage and Local Government publication from 2004 "Quarries and Ancillary Activities – Guidelines for Planning Authorities".

Given that the façade of the nearest residences is approximately 270 m from the nearest active quarry area, the guidance would indicate that there is no potential for soiling when the scale of construction is defined as moderate. No significant impacts are expected when the mitigation measures are taken into account. In relation to PM_{10}, which is the particulate fraction with the potential harmful health effects and vegetation effects, the nearest façades fall outside of the distance for potential significant effects.

Apart from the direct impact of the deposition of particulate material, there may be an associated occasional, slight visual impact with fugitive dust generation. This impact will be minimised by the mitigation measures for minimising dust emissions and those for minimising visual impacts.

There are no other quarries, commercial or industrial facilities in close proximity to the site. As such, it is considered there will be no significant cumulative impacts with respect to the operation of the quarry.

Given the location (c. 50 km from the border with N. Ireland), nature, size and scale of the proposed development, it is expected that the impacts of the development would have imperceptible transboundary impacts on air quality.

Given the low inherent potential for dust and dispersion from the proposed development, the remote rural location, and the mitigation measures incorporated in the design, it is anticipated that the impact on the existing air quality during the operational phase will be occasional, negative and not significant.

The restored quarry will involve a change in land-use from the original agricultural use to mineral extraction and ultimately to the future beneficial use as a wildlife amenity. It is considered that following full restoration and closure of the site that there will be no significant, long-term, adverse impacts in terms of Air Quality.

The worst case impact would be occasional generation of dust from crushing and screening of aggregates and from internal haul roads in the absence of dust suppression resulting in occasional slight negative effects on the immediate surroundings.

Various mitigation measures will be implemented to minimise any impacts as much as practical to ensure the operation of the quarry will not result in any significant impact on residences or local amenities. Thus, a number of mitigation measures are/will be put in place in order to promote fugitive dust reduction and ensure that the operation is within any specified thresholds, and in line with good industry practice.

The existing dust monitoring programme will allow on-going monitoring of fugitive dust emissions from the site, thereby assisting in ensuring compliance with the accepted TA Luft dust deposition limit value to be adopted at site boundaries associated with quarry developments – total dust deposition (soluble and insoluble): 350 mg/m^2/day (when averaged over a 30-day period). This condition is also in accordance with guidance issued by both the Department of the Environment and the EPA in relation to dust deposition monitoring for these types of developments.

Lagan Materials Ltd have in place a group wide Environmental Management System (EMS). The Environmental Monitoring Plan (EMP) for the quarry includes for regular dust monitoring to demonstrate that the development is not having an adverse impact on the surrounding environment. The locations of the dust monitoring stations are shown in Figure 3.1.

This programme will allow on-going monitoring of fugitive dust emissions from the site thereby assisting in ensuring compliance with any future requirements or regulations. The results of this monitoring will be made available to the Local Authority on a regular basis, where members of the public may examine it.

10 NOISE & VIBRATION

This section of the EIAR deals with the issue of noise and blast vibration associated with the proposed development. The baseline study included a desktop review of relevant policy, legislation, planning guidelines and technical guidance with respect to noise emissions. The review of the guidance enabled identification of appropriate noise criteria for the proposed development, and prediction of the levels of noise & vibration emissions at noise sensitive locations near the site.

The principal concern in respect of noise emissions from the proposed development is the effect on residential amenity. The surrounding lands are largely agricultural, and residential property in the area typically comprises one-off single residences and farmsteads along public roads and to a minor extent, along and at the end of lanes off the public roads. The closest large residential settlement to the site is Castlepollard, which is located c. 2 km to the northwest. There are 10 residences within 250 m, 16 within 500 m and 42 within 1 km of the planning application boundary (Refer Figure 4.1). A cluster of 6 residences are located within 250 m on the east side of the R395 across from the site entrance and north along the L5743 (i.e., nos. 5-10), while another cluster of 4 residences are located within 250 m west of the site adjacent to the drainage ditch into which it is proposed to discharge surface waters (i.e., nos. 1-4).

There are no occupied residences within the application site or landholding, and the closest is located c. 270 m northeast of the quarry extraction area. There has been a long historical association with quarrying at this location and consideration has been given to screening of the development, phasing and direction of working with respect to receptors, in order to reduce environmental impacts.

There are no community facilities within 1 km of the site. There are no industrial or commercial developments within 1 km of the site. Thus, the number of sensitive receptors primarily relates to residences 5-10 (Refer to Figure 4.1), which lie within 250 m of the site and some have partial views of the quarry workings.

Routine noise monitoring is carried out by TMS Environment Ltd. on a bi-annual basis at four noise monitoring points, the locations of which are mostly at the site boundaries, as opposed to nearest Noise Sensitive residences, which are further removed. Octave band analysis was also carried out at the monitoring locations and observations were made by TMS Environment personnel to identify the presence of any tonal or impulsive noise. There were no tonal components recorded in the spectra and no tonal or impulsive noise was noted. The results of the monitoring are submitted to Westmeath County Council on a routine basis.

Recent noise monitoring results show that the $L_{Aeq,T}$ values range from 35dB to 61dB $L_{Aeq,30mins}$. All measurement results comply with the current planning permission limits (P.A. Ref. 01/525, PL 25.128072) with the exception of the measurement result at N1 on 08/02/21 & 24/08/21. The measured noise level at N1 was due to passing traffic on the adjacent R395 Regional Road and was not due to site activities. The dominant noise source at all monitoring locations was passing traffic on the nearby R395. The results of the monitoring survey show that the existing quarry is operating within accepted noise limits for such an activity.

An additional Noise monitoring survey was conducted by JSPE on 31/05/21 to determine noise monitoring levels at Noise Sensitive receptors both on and off site. The results confirmed the

results of the previous monitoring surveys, which show that the existing quarry is operating within the accepted noise limits for an activity such as this.

It is considered that the proposed development can continue to operate for the proposed working hours and comply with the EPA Recommended General Noise Limit Criteria (For EPA Scheduled Activities (NG4 2016) Daytime Noise Criterion, 55 dB $L_{Ar,T}$ (07:00 to 19:00 hr).

Blast monitoring is carried out at Castlepollard Quarry for all blasts and is undertaken by Irish Industrial Explosives. Recent blast monitoring results confirm that the quarry is operating with accepted limits for this type of development, i.e., in accordance with Conditions No. 9 and 10 of Planning Permission P.A. Ref. 01/525 (PL 25.128072).

The noise environment in the immediate vicinity of the existing quarry site is determined primarily by noise from the R395 Regional Road. Residences along the road are typically experiencing noise levels of >55 dBL_{Aeq} during daytime hours due to passing traffic on the R395 Regional Road.

As an existing, active quarry with much of its infrastructure in-situ, only a brief construction phase is envisaged, largely with respect to construction of the settlement tanks. It is considered that any direct impact with respect to noise emissions will be slight, temporary, negative due to the construction, decommissioning and restoration stages.

The mobile crushing and screening plant will be located on the quarry floor, centrally within the existing excavation area, relocating periodically as the working face is developed to the south. As such, the quarry will benefit from screening afforded by the existing quarry faces, topography, perimeter berms and hedgerows. Noise resulting from quarry operations can continue to be kept to below the specified limits by implementation of good design, effective operation and management and by the implementation of measures that are deemed to be best practice. It is considered that any direct impact with respect to noise emissions will be long-term, slight, negative due to continued operation of the quarry.

Blasting will be carried out using industry standard bench blasting techniques. Blasting generates ground vibration measured as peak particle velocity (i.e., PPV) and air overpressure measured as the noise level of “air blast” (i.e., dB (Lin)), both of which will continue to be measured for each blast. The nearest proposed limit of the quarry extraction area will be c. 270 m removed from the nearest residential property. Lagan have in place a ‘’Blast Notification Procedure & Blast Monitoring Programme’’. Blast monitoring will be carried out at agreed residences within the area. It is considered that direct impacts with respect to blast emissions will be momentary, not significant, negative impacts.

There will be no indirect, cumulative or transboundary impacts associated with the proposed development. The proposed mitigation and enhancement measures incorporated in the quarry design will result in no significant, negative residual impacts predicted in terms of noise and vibration levels on the local residences, their property, livestock or amenity during the operational phase.

The existing quarry development is the worse-case scenario given that the processing plant will be relocated further to the southeast within the shelter of the quarry void as quarrying progresses and suggests any impact with respect to noise emissions will be long-term, slight, negative due to the continued operation of the quarry. The closest noise sensitive locations

are also close to the R395 Regional Road and some of the existing measured ambient noise levels here already exceed the noise levels from the development.

Lagan Materials Ltd have in place a group wide Environmental Management System (EMS). The Environmental Management Plan (EMP) for the quarry includes for regular noise and blast monitoring to demonstrate that the development is not having an adverse impact on the surrounding environment.

Through implementation of the proposed mitigation measures it is considered the development will continue to have no significant effects with regard to noise and blast vibration levels on the local residences, their property, livestock and amenity.

11 LANDSCAPE

This section of the EIAR addresses the landscape and visual impacts with respect to an accompanying planning application for the proposed development at Deerpark, Castlepollard, Co. Westmeath. The landscape and visual baseline study comprised a desktop study with follow-up field survey in the vicinity of the site. Although closely linked, landscape and visual impacts are assessed separately.

The desk study was used to determine the nature of the visual amenity of the area along with the approximate visibility of the development, which was determined through topographic analysis of map data. Potential receptors of visual effects, including residents and visitors through the area were also identified.

Ordnance Survey Ireland (OSi) Discovery Series 1:50,000 and OSi 1:5,000 raster mapping and aerial photography were examined. A topographical survey of the existing site was also carried out and modeled using digital terrain modeling software through which cross sections were produced. LSS Digital Terrain Modelling software has been used to undertake ZTV (Zones of Theoretical Visibility analysis).

Site visits were undertaken on 7th April 2021 and 31st May 2021. The purpose of the site visits was to enable familiarisation with the site, establish the general landscape character of the area and identify principal representative viewpoints including residences, prospects, public pathways and roads with views of the site. The actual extent of visibility was also checked in the field due to the localised screening effects of buildings, walls, fences, trees, hedgerows and banks. Potential seasonal screening effects were also identified where necessary and recorded.

The visual survey also includes and is supported by a photographic record from the principal and other relevant viewpoints. The photographs were taken at eye level at the point of interest towards the development area using a digital camera.

Principal viewpoints were mapped, and these views illustrated by photographs with annotations to describe any important characteristics, and the changes that have arisen as a result of the development.

Because the quarry has been developed by excavating into the northern flank of the hill, the latter screens all views of the workings in an arc from the northwest anti-clockwise to the east. Presently, there are only intermittent views of the workings along the R395 east of the entranceway with most views of the current quarry workings screened by the copse of trees on the flank of the hill into which the quarry has been excavated. Intervening hedgerows reduces the viewshed of the quarry site from the north, such that there are only limited, middle-distance views further north along the R395. These generally amount to views of the upper quarry face, against the copse of trees defining the rim of the quarry void. However, there will be no significant additional visual intrusion with continuation of quarry operations as the back quarry face progresses southwards. There are also middle-distance intermittent views from rural road L5741. These intermittent views generally amount to views of the upper quarry face.

Deerpark lies within the Northern Hills & Lakes Landscape Character Area (LCA), which consists of prominent limestone hills with enclosed lakes and areas of peat deposits. The LCA has a rural landscape of particularly high scenic quality containing a number of lakes with

several preserved views. The site lies outside of the Lough Lene Area of High Amenity and is not within the Fore Special Heritage Area. The plan recognises 35 Protected Views in the county, but none are located near or incorporate the quarry or site.

The site has a long history of quarrying, and these activities have co-existed with other land uses in the area, particularly medium intensity agriculture. Consideration has been given to screening of the development, phasing and direction of working and restoration of the upper quarry face with respect to receptors so as to reduce the visual impact, while impacts due to noise and dust are substantially attenuated. Continuance of the quarry operations has the benefit of enabling an appropriate final restoration of the quarry, which will allow full reinstatement of the land to beneficial after-use as a wildlife amenity.

It is proposed that the copse of trees that cover the east flank of the hill and obscure the extraction area are preserved so as to visually screen the workings from vantages particularly to the southeast along the R395.

The receptors with views of the site consist of road users of the R395 regional road and two local roads (e.g., L5741, L5743), as well as local residents.

There are partially open views of the quarry workings from the R395, particularly at the site entrance, although these tend to be transient momentary views to passing traffic, and further north along the R395.

The results of the visual field survey have shown that due to intervening topography, screening, and vegetation, views towards the quarry site are generally limited to restricted middle distance views from elevated ground and residences to the northeast. These intermittent views generally amount to views of the upper quarry face. The existing visual impact with respect to the quarry from these vantages is considered to be moderate, medium to long term, negative as extraction extends to southeast. However, there will be no significant additional visual intrusion with continuation of quarry operations as the back quarry face progresses southwards.

There are no indirect impacts associated with the proposed development and the surrounding areas.

There are no other significant commercial, industrial or extractive developments or projects within c. 2 km of the site at Deerpark. There will be no significant in combination landscape impacts resulting from this project, and other local existing developments, quarries, projects and plans.

Given the location (c. 50 km from the border with N. Ireland), nature, size and scale of the proposed development, it is expected that the impacts of the development would have no significant transboundary effects on landscape, given the local or at most regional nature of landscapes.

As a result of the proposed mitigation and enhancement measures incorporated in the design, no significant, adverse residual impacts are predicted in terms of Landscape during the operational phase.

It is considered that following full restoration and closure of the site that there will also be no significant, long-term, adverse impacts in terms of Landscape. The restored quarry will provide a more sustainable, long-term environment than is currently the case, but with a

change in land-use from the original agricultural use to mineral extraction to ultimately a future beneficial use as a wildlife amenity.

The worst case impact would be significant in the medium term, if the quarry was to be developed in an uncontrolled manner with no consideration given to screening of the development, phasing and direction of working and restoration of the upper quarry face with respect to receptors so as to reduce the visual impact.

Consideration has been given to screening of the development, phasing and direction of working and restoration of the upper quarry face with respect to receptors so as to reduce the visual impact. The visual impact following restoration is considered to be significant, long term, positive as site is progressively restored to beneficial after-use.

All crushing and processing will be carried out on the quarry floor being screened by the quarry face and perimeter screening berms. The working scheme has been phased with consideration given to implementation of landscaping proposals and restoration to further reduce the visual impact of the development on the surroundings.

The main aim of the landscaping & restoration plan is to minimise the impact of quarrying on the existing landscape of the area both now and into the future. A restoration and landscaping plan has been prepared as part of the application. Site restoration allows vegetation to become established during the course of the development, thereby reducing the overall impact of the development (i.e., visual impact, dust impact, flora and fauna impact, etc.).

A well-coordinated restoration process (in consultation with the GSI) will ensure that representative areas of quarry faces are left unvegetated. Grading and planting on completed sections of the upper quarry face will be carried out. Parts of the upper benches will be seeded with suitable species of shrubs and climbers to create vegetated ledges. Vegetation and natural colonisation on these benches will encourage growth on the faces and will subsequently break up the natural harshness of the exposed rock face. This will occur in a progressive manner as quarrying advances.

A further 2 years will be required to implement and complete final restoration of the site to a secure wildlife amenity use. The proposed development will enable the operator to fully complete the restoration of both the existing and proposed quarry to a beneficial after-use.

Redundant structures, plant equipment and stockpiles will be removed from site on cessation of quarry activity. The former plant areas will be restored using topsoil/overburden and planted with a mixture of native trees and shrubs.

12 CULTURAL HERITAGE

Dr. Charles Mount was commissioned by J Sheils Planning & Environmental Ltd. on behalf of Lagan Materials Ltd. to prepare an assessment that addresses the impacts of the proposed development on the archaeological, architectural and cultural heritage of the application site and surrounding area at Castlepollard Quarry, Deerpark, Castlepollard, Co. Westmeath.

The assessment represents the Cultural Heritage section of the Environmental Impact Assessment Report (EIAR) pertaining to the proposed development of the quarry. The assessment consisted of a desktop and fieldwork study. The field inspection was carried out on the 7th of May 2021 to determine the location, extent and significance of any archaeological sites and to identify any previously unrecorded or suspected sites and potable finds.

The study involved detailed investigation of the archaeological and historical background of the development site, the landholding and the surrounding area extending 1 km from the development boundary. This area was examined using information from the Record of Monuments and Places of County Westmeath, the Westmeath County Development Plan, lists of excavations and cartographic and documentary sources.

Examination of the Record of Monuments and Places (RMP) for County Westmeath indicated that there are no RMPs located within the application area, although there are several within the surrounding 1 km study area. Examination of the Sites and Monuments Record (SMR) indicated that there are no SMRs in the application area or the study area, although there is one within the surrounding 1 km study area.

The closest Recorded Monument to the application externally is WM007-035----a Hilltop enclosure in Ballany townland. This monument is located 0.58 km to the south-east of the application area and is considered too far distant to be directly or indirectly impacted by the proposal. The remaining Recorded Monuments in the study area located at further distances from the application area and are considered to be too far distant to be directly or indirectly impacted by the proposal.

There is one SMR in the study area outside the application area. WM007-134---- is an earthwork enclosure in Deerpark townland. This monument is located 0.6 km to the south-east of the application area and is considered too far distant to be directly or indirectly impacted by the proposal.

No sites of archaeological importance, National Monuments, or protected structures listed in the Westmeath Development Plan 2021-2027 are located within the proposed development area.

Examination of the Ordnance Survey 1995, 2000 and 2005 imagery as well as Google Earth imagery from 2014, 2016 and 2020, Bing imagery from 2011 and Apple Maps imagery from 2017 did not indicate any additional archaeological or cultural heritage sites in the application area.

The excavations bulletin at excavations.ie was examined to identify any licensed archaeological investigations carried out in the application area or the study area. The analysis indicated that there have been no licensed archaeological investigations carried out in the application area or the study area.

A field inspection was carried out on 7th of May 2021 to identify any previously unknown archaeological or cultural heritage sites. No structures of special architectural or heritage interest were identified.

If the proposed development were not to proceed there would be no negative impact on the cultural heritage. There will be no direct, indirect or cumulative impacts on any known items of archaeology, cultural heritage or buildings of heritage or special architectural interest in the application area or the vicinity.

As a result of the proposed mitigation and enhancement measures incorporated in the design, no significant, adverse residual impacts on the archaeological, architectural or cultural heritage resource are predicted during the operational phase.

There are no items of cultural heritage, archaeological sites or monuments or buildings of heritage or special architectural interest known from the application area. No direct or indirect impacts warranting specific mitigation were identified during the course of the cultural heritage assessment. Due to the possibility of the survival of previously unknown sub-surface archaeological deposits or finds within the application area, all topsoil-stripping in this area should be monitored by a qualified archaeologist.

13 MATERIAL ASSETS

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

Material assets may be defined as resources that are valued and that are intrinsic to specific places, and may be either of human or natural origin, and the value may arise from either economic or cultural reasons.

Based on the nature of the proposed development, the material assets that could potentially be impacted by the quarry, and which were identified for assessment are: (1) non-renewable resources (minerals, soils); (2) settlement - residential development; (3) land use; (4) transport infrastructure; (5) built services; (6) waste management infrastructure (7) cultural assets - archaeological, historic and architectural heritage; and (8) landscape and natural heritage.

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

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

The nature of the extractive industry is such that aggregate extraction can only take place where suitable aggregate resources occur. Aggregate products are generally of low unit value, with the most significant cost being transportation. Therefore, most quarries typically operate within a radius of c. 25 km of their market. The proposed development has the benefit of good access to the regional and national road network to meet future demands for aggregates in the area. It will ensure the continued viability of the aggregate supply in County Westmeath.

The site has had a long, if intermittent, history of quarrying, such that these activities have co-existed with other, predominantly agricultural, land uses in the area. The proposed land use on-site will continue the tradition of quarrying activities and associated operations. On completion of quarrying, the site will be reinstated in accordance with the proposed quarry restoration scheme. Therefore, in the long term, the site will be assimilated back into the landscape in a planned manner, with the attendant improvement to the visual amenity of the area.

As the quarry area is currently active, the absence of the proposed development would have significant impact on the material assets within the site, resulting in an identified and workable aggregate resource being left unworked.

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

It is considered that following restoration and the mitigation measures incorporated in the design that there will be no significant adverse effects in terms of material assets, other than the loss of the in-situ mineral resources due to extraction, which is an unavoidable consequence that must be balanced against society's need for development. The restoration of the site to beneficial after-use as a wildlife amenity, will result in a permanent, significant, positive effect in the long-term.

There are no other projects, quarries, commercial or industrial facilities in close proximity to the site. As such, it is considered there are no significant cumulative impacts with respect to the operation of the quarry on the material assets of the area.

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

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

The applicant has established an environmental monitoring programme (EMP) for the quarry site. The EMP allows for on-going monitoring of environmental emissions (e.g., noise, dust, blasting, water) from the site, thereby assisting in ensuring compliance with any requirements or regulations. The results of this monitoring will be made available to Westmeath County Council on a regular basis, where members of the public may examine it. The monitoring programme is sufficiently robust to ensure compliance with any conditions attached to a decision to grant planning permission.

This quarry is located in a rural area with low population density. The boundaries of the quarry are enclosed by a combination of berms, hedgerows and fencing, which is designed to blend into the surrounding landscape. There will be ongoing monitoring to ensure that site boundaries are maintained in a proper manner, and these include thickening of hedgerows, fencing of the site, provision and maintenance of quarry signage, routine cleaning/housekeeping and the removal of unsightly features.

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

14 ROADS & TRAFFIC

This section of the EIAR describes the Road & Traffic environment in the vicinity of the proposed development at the Quarry at Deerpark, Castlepollard, Co. Westmeath, coupled with an assessment of the potential traffic impacts, if any, of the development on the existing road network adjacent to the proposed development.

This study has been prepared by Alan O'Reilly BA BAI MSc CEng MIEI RSACert. Alan is a Chartered Engineer with PMCE, and has almost 10 years' experience in the area of Traffic and Transport Engineering including Road Safety Audits, Traffic and Transport Assessments, Collision Investigation and Road Design.

The proposed development will consist of the continued use and operation of the existing quarry, including deepening of the quarry, along with minor amendments to the permitted quarry layout comprising an extraction area of c. 4 ha within an overall application area of c. 11.4 ha. An average extraction capacity of 100,000 tonnes per annum is anticipated as part of the proposed development.

The existing quarry is located with direct access onto the R395 Regional Road (Dublin Road). The R395 is a Regional Road linking Castlepollard to the N55 National Road at Edgeworthstown in the northwest with the N51 and N52 National Roads at Delvin in the southwest. In the vicinity of the site, the R395 is c. 6 m wide with no footways or hard strips. It is bounded on both sides by a grassed verge and a hedgerow, or property boundaries, to its rear.

The total daily trips associated with the quarry operation will therefore account for an average of 44 movements daily, 32 of which relate to HGV's (73%). It can be seen that the pattern of arrivals/departures is consistent with a short turn around within the sites, e.g., that vehicles generally arrive and depart within a short time period, likely to be less than an hour. At the quarry access junction on the R395, when travelling to/from the quarry, it is anticipated that development traffic will be split 50:50 to the northwest and southeast for arrivals and departures.

Although the development traffic does not exceed the 10% threshold on the R395, for the purpose of a robust assessment, the quarry access on the R395, and the R395 itself, underwent full junction capacity and link capacity assessments, respectively.

Link capacity analysis shows that the R395 will continue to operate within capacity for each of the assessment years 2022, 2027 and 2037. Similarly, junction capacity analysis indicates that the existing junction of the quarry and the R395 will operate within capacity for assessment years 2022, 2027 and 2037.

The entrance to the quarry is provided via an existing access onto the R395 Regional Road. The R395 continues northwest of the quarry access in one direction and southeast of the quarry access in the other direction. The posted speed limit on the R395 at, and on the approaches to the quarry access, is 80 kph. The visibility splays at the quarry access were assessed against the relevant guidance and require the visibility to be assessed from a point 3 m back from the edge of the major road. Unobstructed sightlines of 160 m are required for a Design Speed of 85 kph to the high object height of 1.05 m.

The required sightlines are achievable to the southeast from a point 3 m back from the edge of the R395. To the northwest, the visibility splay is indicated as passing through existing trees and vegetation. These will be cut back and maintained to ensure the required visibility is provided.

The site contains 6 parking spaces. This parking provision is sufficient for the number of staff working on site and also for any miscellaneous trips that may occur.

The impact of the proposed development on the regional and national road network has been assessed for the construction, operation and restoration phases of the proposed development.

The volume of traffic generated by the proposed development will result in an average daily vehicle flow of 44 vehicles, 32 of which would be HGVs. It will be most pronounced along the R395 from the site entrance to the junction with the R394 regional road in Castlepollard to the northwest and to the N52 national road in Delvin to the southeast.

The traffic impact of the quarry site on the R395 will result in an increase in traffic on the network, but this increase is considered not significant. Traffic generated by the proposed development will account for between 0.83% and 0.99% of total traffic on the R395 from 2022 to 2037. The existing capacity of the adjacent road network has been shown to comfortably accommodate these minor increases.

The traffic impact on the R395/Quarry Access junction will result in a slight increase in vehicles entering and exiting the quarry during the day. The increase however is considered not to have a significant impact on the operation of the junction which is forecast to continue to experience spare capacity for the lifetime of the development.

The volume of traffic generated by the proposed development can be comfortably accommodated by the local road network. There will be no indirect impacts. There will be no significant cumulative impacts resulting from the proposed development during the construction, operation, or commissioning phases of the proposed development.

As a result of the proposed mitigation and enhancement measures incorporated in the design, no significant, adverse residual impacts are predicted in terms of roads and traffic during the operational phase of the development.

It is considered that following full restoration and closure of the site that there will also be no significant, long-term, adverse impacts in terms of the local road network. The restored quarry will provide a change in land-use from mineral extraction to a beneficial after-use as a wildlife amenity.

The Worst Case impact of the proposed development could be the accelerated deterioration of the pavement along the R395 due to increased HGV traffic, but a mechanism for managing this can be incorporated in a planning condition to be agreed with the Road Engineering Department of Westmeath County Council. Another worst-case impact would be a traffic accident involving a HGV truck associated with the proposed development, although the historical collision data from 2005 and 2016 do not indicate a pattern of collisions exists at the quarry access.

The proposed development at the existing quarry site will generate increased traffic movements on the surrounding road network. A number of mitigation measures will be

implemented to reduce the impacts of quarry traffic on the local road network. The mitigation measures proposed are as follows:-

- The R395 road in the vicinity of the entrance will be mechanically swept on a regular basis;
- The pavement of the roads in the vicinity of the existing quarry and the R395 is in good condition and will be reviewed with the Roads Section of Westmeath County Council at an agreed frequency;
- The parking requirements for the proposed development mainly relate to the quarry employees and visitors. It is proposed to provide sufficient parking spaces within the quarry for employees and visitors. The maximum number of direct employees will be 2, while spaces will be provided for other contractors. A total of 6 parking spaces will be provided; and
- To the northwest, the visibility splay is indicated as passing through existing trees and vegetation. These will be cut back and maintained to ensure the required visibility will be provided.

15 INTERACTIONS

The interactions of the impacts and mitigation measures between one topic and another, where applicable, are discussed under the respective environmental factor in EIAR sections 4 to 14, rather than in EIAR Section 15 Interactions. This section draws attention to significant interactions and interdependencies in the existing environment, but the actual interactions and their significance are dealt with in the relevant chapter.

The general practice is to include a matrix to show where interactions between effects on different environmental factors have been addressed. This is usually done using the actual headings used in the EIAR for each factor. The following matrix has been generated to show where possible interactions (top of matrix) may result between the various environmental factors including brief details (bottom of matrix). For details of any interactions refer to the relevant sections of the EIAR.

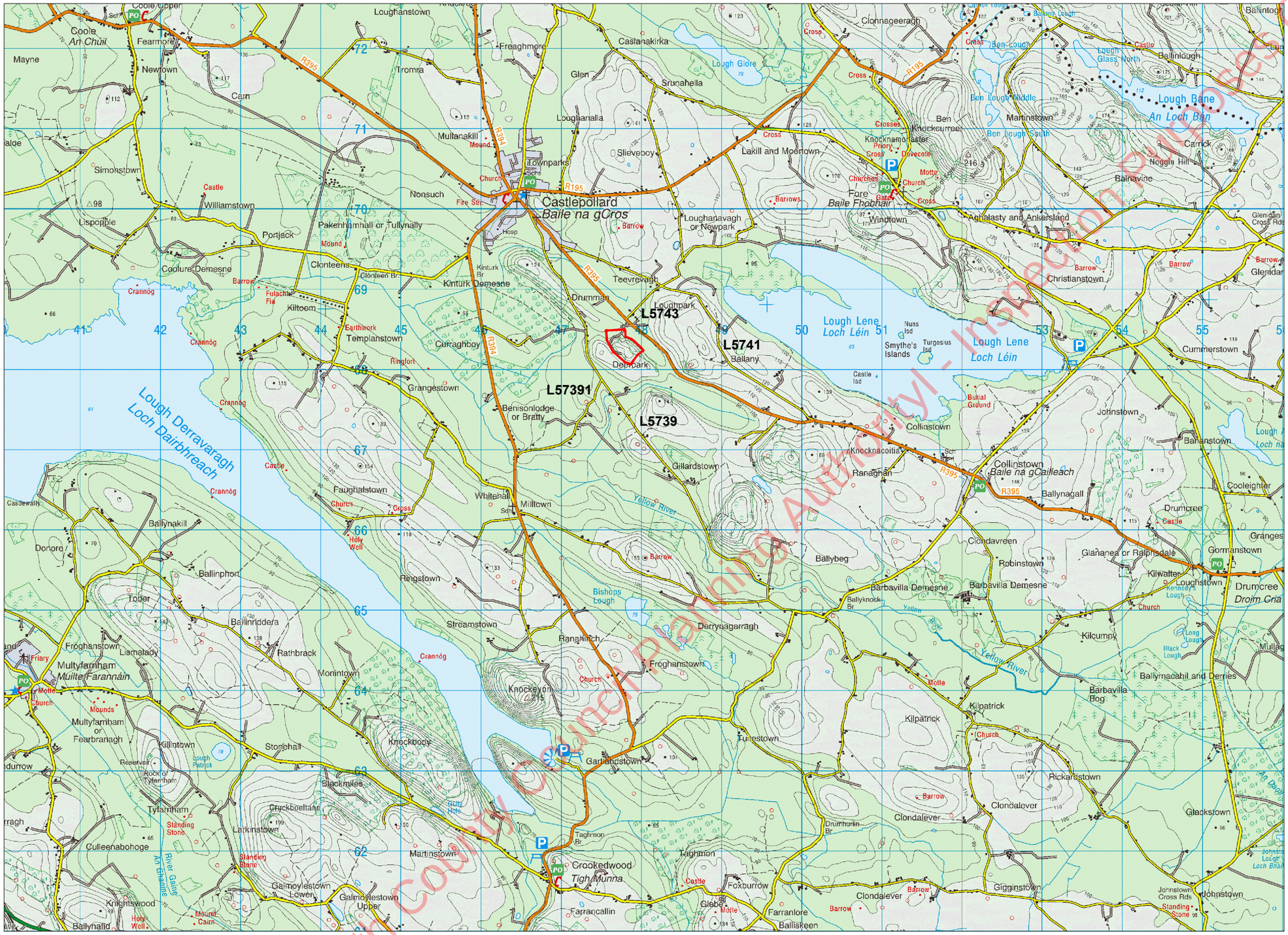
Table 15 Interactions Matrix

Con	Construction Phase	Op	Operational Phase	x	No Interaction

● Weak Interaction ● Some Interaction ● Strong Interaction

Factors (Interaction)	4 Population & Human Health		5 Biodiversity		6 Land, Soils & Geology		7 Water		8 Climate		9 Air Quality		10 Noise & Vibration		11 Landscape		12 Cultural Heritage		13 Material Assets		14 Traffic	
	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.
4 Population & Human Health			●	●	●	●	x	●	x	x	●	●	●	●	●	●	x	x	x	●	x	●
5 Biodiversity	The single Peregrine Falcon recorded nesting on the cliff face of the NW area of the site will not be affected by the proposed development. Vegetation clearance will be undertaken outside the bird nesting season from 1st March to August 31st				●	●	x	●	x	x	●	●	●	●	●	●	x	x	x	x	x	x
6 Land, Soils & Geology	Moderate, long-term, negative impact due to removal of resources. Significant, long-term, positive impacts if site restoration includes provision for preservation, promotion and access to designated geoheritage features.		There will be no significant change to the quarry habitats. The predicted direct effect on footprint habitats is neutral, imperceptible and long-term.				x	●	x	x	x	x	x	x	●	●	x	x	x	●	x	x
7 Water	No potential for significant drawdown nor potential for impact on local wells is predicted. No PWS nor GWS abstractions within the radius of influence of the quarry have been identified. No other quarry nor other developments are within a significant distance to affect a cumulative impact.		Surface water catchment is ~1%, of >1000 km^2 surface water catchment of the closest downstream SAC, i.e., Lough Ree. No impact is possible at this ratio, distance and the magnitude of the land mass in between the site and any sensitive receptor.		Accidental spillage of contaminants during site operations could cause short to long term, moderate to significant impacts to soils, groundwater and the surface water environment, if not used in an environmentally safe manner.				x	●	x	x	x	x	x	x	x	x	x	●	x	x
8 Climate	x		x		x		Hydrological survey for receiving waters suggests that discharge to Yellow River system can be accommodated with no risk of flooding.				x	x	x	x	x	x	x	x	x	x	x	x
9 Air Quality	The impacts of dust from the operations will be direct, slight, occasional, negative and confined to the site area. Mitigation measures will be implemented to minimise any impacts as much as practical to ensure the operation of the quarry will not result in any significant impact on residences or local amenities.				x		x		x				x	x	x	●	x	x	x	x	x	●
10 Noise & Vibration	Residences along R395 are typically experiencing noise levels of >55 dBLAeq during daytime hours due to passing traffic. It is considered that any direct impact with respect to noise emissions will be long-term, slight, negative due to continued operation of the quarry.		The single Peregrine Falcon recorded nesting on the cliff face of the NW area of the site will not be affected by the proposed development. Vegetation clearance will be undertaken outside the bird nesting season from 1st March to August 31s		x		x		x		x				x	x	x	x	x	●	x	●
11 Landscape	It is expected that in the absence of mitigation measures that there will be slight to moderate negative effects with respect to local amenity and residential receptors as a result of development of Castlepollard Quarry. Consideration has been given to screening using preservation of existing vegetation, provision of screening berms as necessary, progressive restoration of upper quarry face and the final restoration of the quarry site once operations at the site cease				Moderate, long-term, negative impact due to removal of resources. Significant, long-term, positive impacts if site restoration includes provision for preservation, promotion and access to designated geoheritage features.		x		x		There may be an associated occasional slight negative visual impact with fugitive dust generation, This impact will be minimised by the mitigation measures described to minimise dust in Section 9.6.		x				x	x	●	●	x	x
12 Cultural Heritage	x		x		x		x		x		x		x		x				x	x	x	x
13 Material Assets	Moderate, permanent, negative impact due to removal of mineral resources. Significant, long-term, positive impacts if site restoration includes provision for preservation, promotion and access to designated geoheritage features.		x		Moderate, permanent, negative impact due to removal of mineral resources. Significant, long-term, positive impacts if site restoration includes provision for preservation, promotion and access to designated geoheritage features.		Groundwater as a source of water supply is not a receptor because there are no domestic wells and no public water supply wells in proximity.		x		x		Noise and vibration emanating from the quarry due to operating machinery and intermittent blasting will be controlled to within accepted noise and vibration thresholds.		Consideration has been given to screening using preservation of existing vegetation, progressive restoration of upper quarry face.		x				x	●
14 Traffic	The traffic impact of the quarry site on the R395 will result in an increase in traffic on the network, but this increase is considered not significant. The existing capacity of the adjacent road network has been shown to comfortably accommodate these minor increases.		x		x		x		x		There will be imperceptible impact with respect to local amenity and sensitive receptors as a result of dust and fumes. Trucks entering and leaving the site with dusty materials shall be covered and they shall pass through a wheel wash before exiting.		Residences along R395 are typically experiencing noise levels of >55 dBLAeq during daytime hours due to passing traffic. It is considered that any direct impact with respect to noise emissions will be long-term, slight, negative due to continued operation of the quarry.		x		x		The Worst-Case Impact of the development could be the deterioration of the pavement along the R395 due to HGV traffic. This may require maintenance works during the life of the development.			

16 FIGURES



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NOTES:

1. All Dimensions in metres (m)
2. Elevation Levels - metres Above Ordnance Datum (mAOD)
3. Extract from 1:50,000 OSI Discovery Series Map No. 41

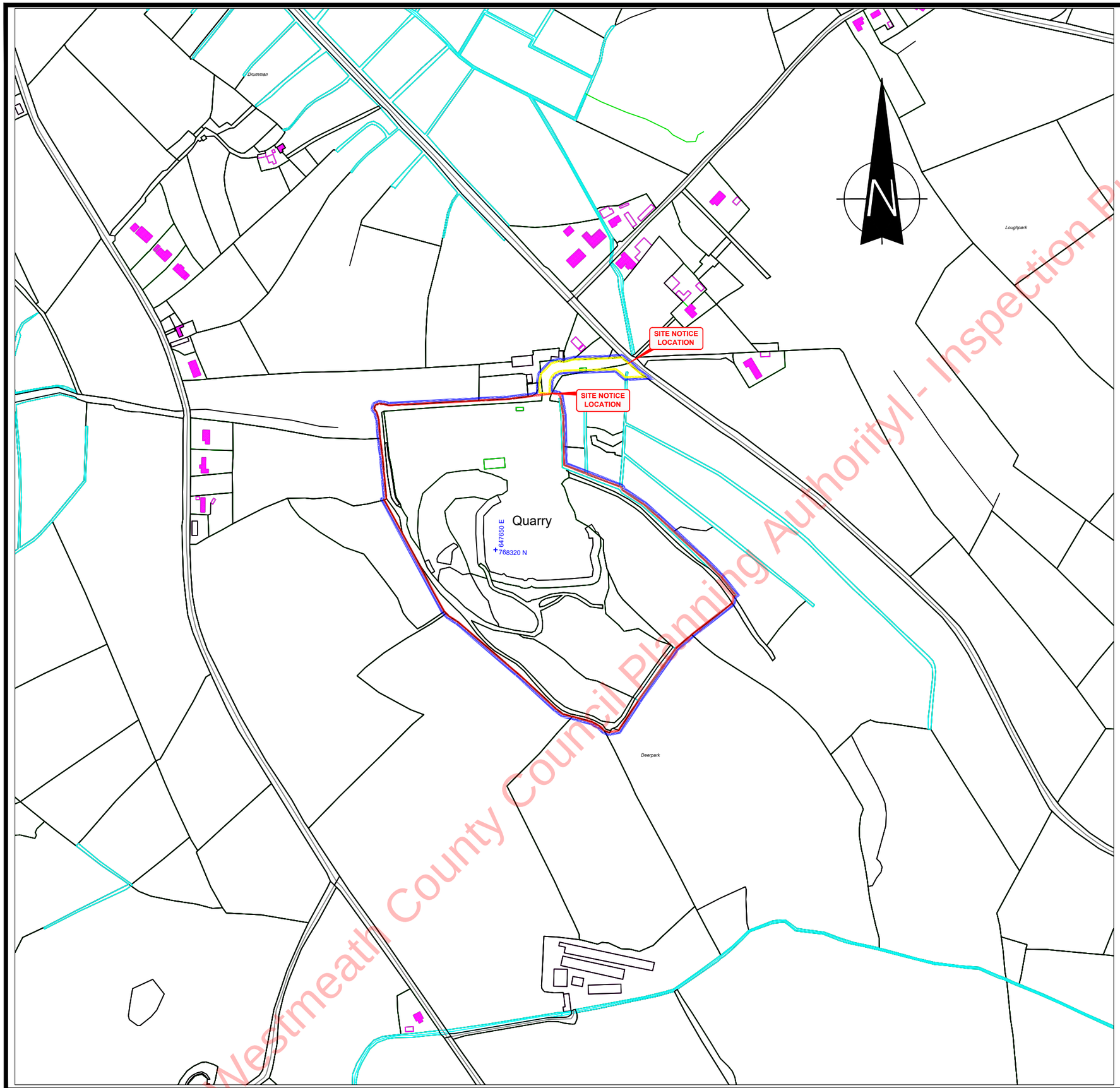
Legend

	Application Area *(c. 11.4 ha)*
L5741	Local Roads

CLIENT	**Lagan Materials Ltd**
DRAWING	**Site Location Map**
LOCATION	**Deerpark, Castlepollard, Co. Westmeath**

JSPE
31 Athlumney Castle, Navan, Co Meath
Phone: 046 9073997
Email: johnsheils@jspe.ie
Web: jspe.ie
J SHEILS PLANNING & ENVIRONMENTAL LTD

Drawn by **John Sheils**	Scale **1:50,000**	
Checked by **John Sheils**	Job No. **JSPE 277**	
Date **20/12/2021**	Figure No. **1.1**	Rev. **00**



Legend

- Lands under Operators Control (c.11.7 ha)
- Application Area (c. 11.4 ha)
- Wayleave
- Irish Transverse Mercator (ITM) geographic coordinates
- Residence

Description:
==========
Digital Cartographic Model (DCM)

Publisher / Source:
==========
Ordnance Survey Ireland (OSi)

Projection= IRENET95_Irish_Transverse_Mercator

Centre Point Coordinates:
==========
X,Y= 647756.5,768302.0

Reference Index:
==========
Map Series | Map Sheets
1:5,000 | 2496
1:5,000 | 2429
1:5,000 | 2497
1:5,000 | 2428

Data Extraction Date:
==========
Date= 10-May-2021

NOTES:

1. **All Dimensions in metres (m)**
2. **Elevation Levels - metres Above Ordnance Datum (mAOD)**
3. **For Planning Purposes Only. Do not scale for setting out.**

Scale 1:5,000

0m 50m 100m 150m 200m

CLIENT	**Lagan Materials Ltd**
DRAWING	**Application Area Map**
LOCATION	**Deerpark, Castlepollard, Co. Westmeath**

JSPE
31 Athlumney Castle,
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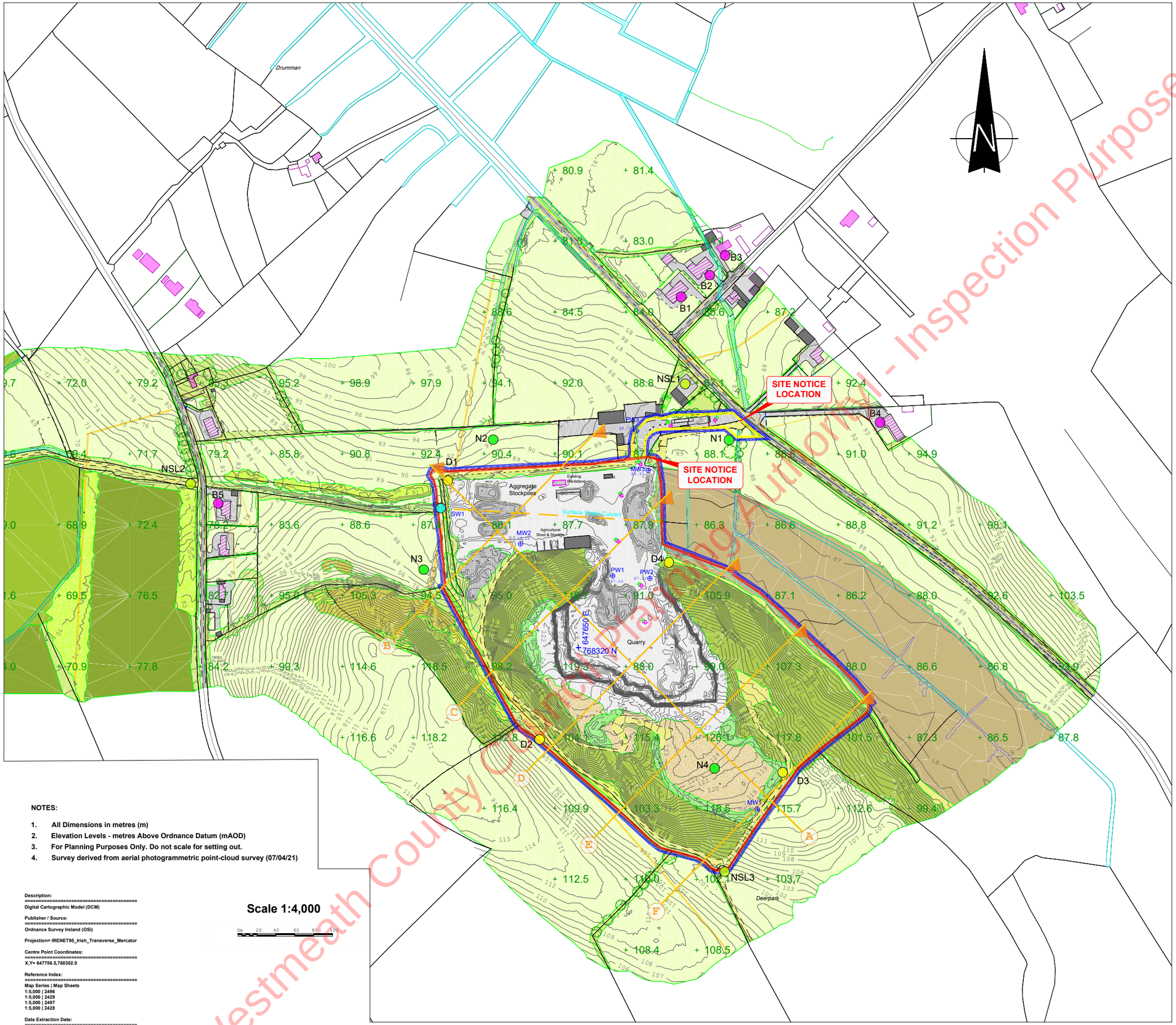
Drawn by **John Sheils**	Scale **1:5,000**	
Checked by **John Sheils**	Job No. **JSPE 280**	
Date **20/12/2021**	Figure No. **1.2**	Rev. **00**



Legend

- Lands under Operators Control (c.11.7 ha)
- Application Area (c. 11.4 ha)
- Wayleave
- Quarry Area
- Hard Standing/Asphalt
- Pasture
- Track
- Rough Pasture
- Marshy Area
- Scrubland
- Aggregate Stockpiles
- Buildings/Structures
- Telephone Lines
- Hedgerows
- Power Lines
- Gorse
- Forestry
- Berms
- Residence
- Surface Water Culvert
- Soil Stripping
- Fence
- Traffic In
- Gate
- Traffic Out
- Contours *(mAOD)*
- 87.7 Spot Levels *(mAOD)*
- Irish Transverse Mercator (ITM) geographic coordinates
- Sections (Refer to Drawing D06)
- D1 Dust Monitoring Points
- N1 Noise Monitoring Points
- NSL1 Noise Sensitive Location
- B1 Blast Monitoring Points
- SW1 Surface Water Monitoring Points
- PW MP Groundwater Monitoring Points & Wells

NOTES:

1. All Dimensions in metres (m)
2. Elevation Levels - metres Above Ordnance Datum (mAOD)
3. For Planning Purposes Only. Do not scale for setting out.
4. Survey derived from aerial photogrammetric point-cloud survey (07/04/21)

Scale 1:4,000

0m 20 40 60 80 100

Description:
==========
Digital Cartographic Model (DCM)

Publisher / Source:
==========
Ordnance Survey Ireland (OSi)

Projection= IRENET95_Irish_Transverse_Mercator

Centre Point Coordinates:
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X,Y= 647756.5,768302.0

Reference Index:
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Map Series | Map Sheets
1:5,000 | 2496
1:5,000 | 2429
1:5,000 | 2497
1:5,000 | 2428

Data Extraction Date:
==========
Date= 10-May-2021

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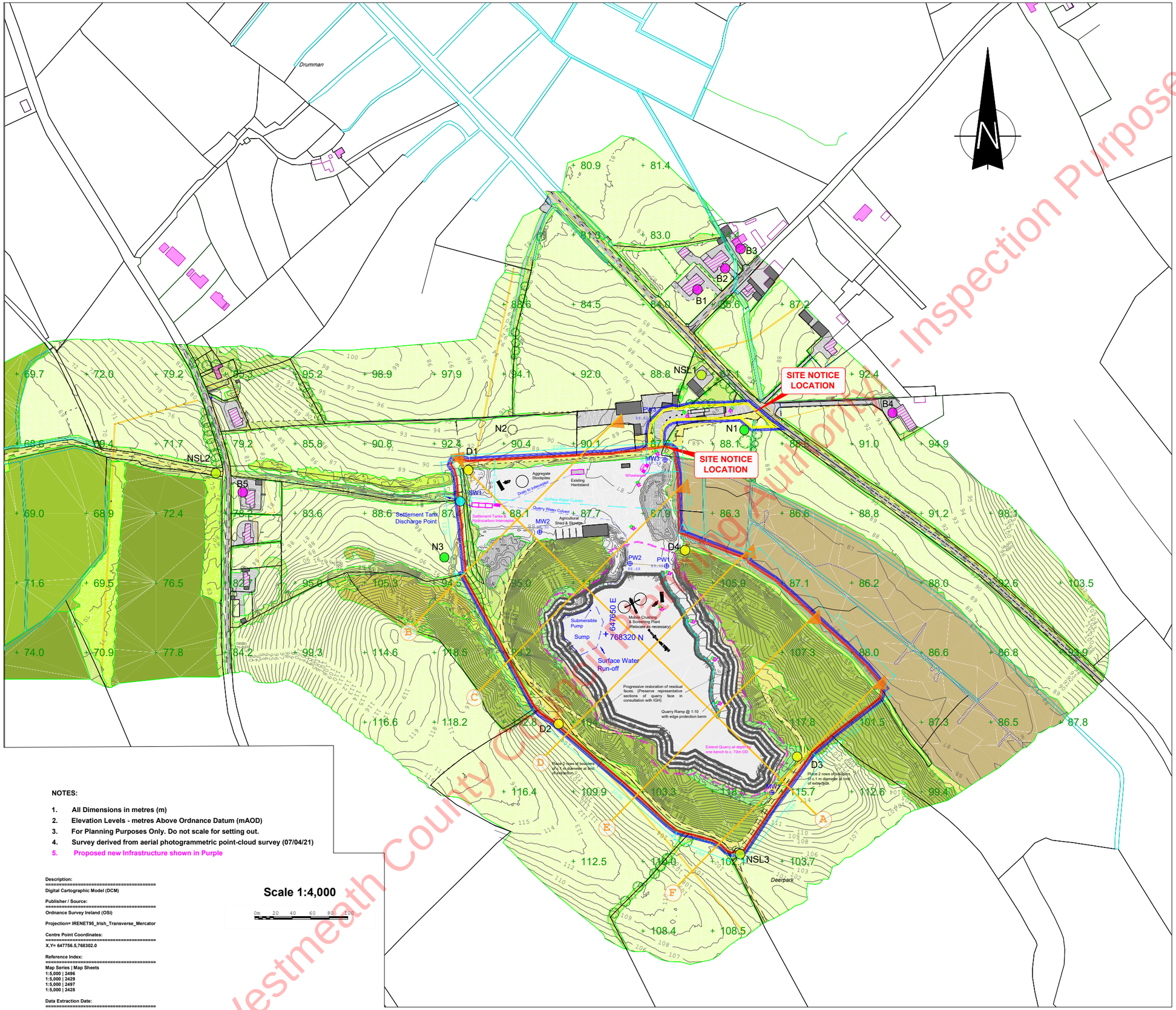
CLIENT	Lagan Materials Ltd
DRAWING	Site Plan - Existing
LOCATION	Deerpark, Castlepollard, Co. Westmeath

Drawn by: John Sheils	Scale: 1: 4,000	
Checked by: John Sheils	Job No.: JSPE 277	
Date: 20/12/21	Figure No.: 1.3	Rev.: 0



Legend

- Lands under Operators Control (c.11.7 ha)
- Application Area (c. 11.4 ha)
- Wayleave
- Extraction Area (*c. 4 ha*)
- Quarry Area
- Hard Standing/Asphalt
- Pasture
- Track
- Rough Pasture
- Marshy Area
- Scrubland
- Aggregate Stockpiles
- Buildings/Structures
- Telephone Lines
- Hedgerows
- Power Lines
- Gorse
- Forestry
- Berms - Plant with native barrier species (e.g Hawthorn, Blackthorn)
- Residence
- Surface Water Culvert
- Distance of Structures from Boundaries of Site
- Fence
- Traffic In
- Gate
- Traffic Out
- Contours *(mAOD)*
- 87.7 Spot Levels *(mAOD)*
- Irish Transverse Mercator (ITM) geographic coordinates
- Sections (Refer to Drawing D06)
- D1 Dust Monitoring Points
- N1 Noise Monitoring Points
- NSL1 Noise Sensitive Location
- B1 Blast Monitoring Points
- SW1 Surface Water Monitoring Points
- PW MP Groundwater Monitoring Points & Wells

NOTES:

1. All Dimensions in metres (m)
2. Elevation Levels - metres Above Ordnance Datum (mAOD)
3. For Planning Purposes Only. Do not scale for setting out.
4. Survey derived from aerial photogrammetric point-cloud survey (07/04/21)
5. Proposed new Infrastructure shown in Purple

Scale 1:4,000

0m 20 40 60 80 100

Description:
==========
Digital Cartographic Model (DCM)

Publisher / Source:
==========
Ordnance Survey Ireland (OSi)

Projection= IRENET95_Irish_Transverse_Mercator

Centre Point Coordinates:
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X,Y= 647756.5,768302.0

Reference Index:
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Map Series | Map Sheets
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1:5,000 | 2497
1:5,000 | 2428

Data Extraction Date:
==========
Date= 10-May-2021

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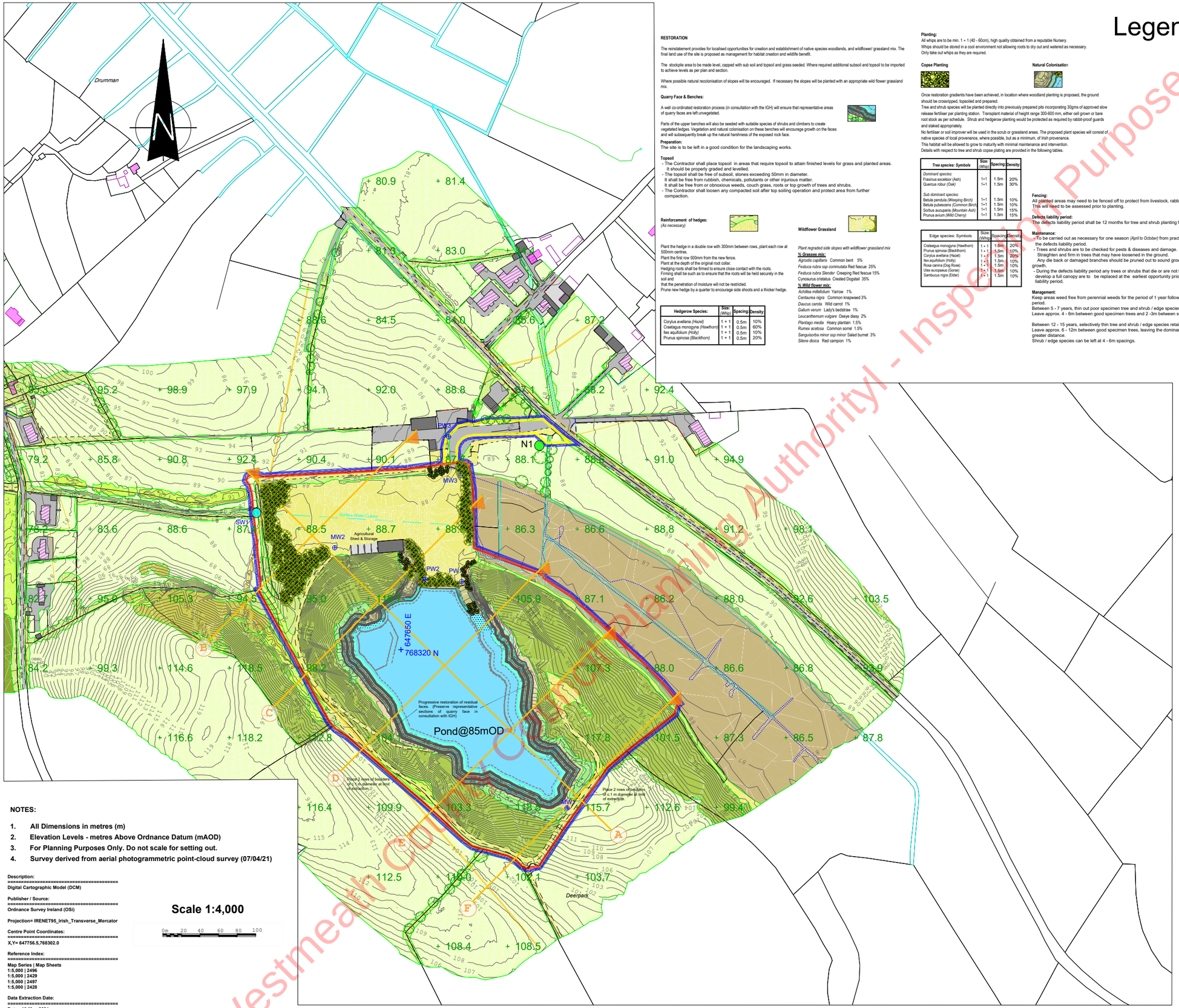
CLIENT	Lagan Materials Ltd
DRAWING	Site Plan - Proposed
LOCATION	Deerpark, Castlepollard, Co. Westmeath

Drawn by: John Sheils	Scale: 1: 4,000	
Checked by: John Sheils	Job No.: JSPE 277	
Date: 20/12/21	Figure No.: 3.1	Rev.: 0



NOTES:

1. All Dimensions in metres (m)
2. Elevation Levels - metres Above Ordnance Datum (mAOD)
3. For Planning Purposes Only. Do not scale for setting out.
4. Survey derived from aerial photogrammetric point-cloud survey (07/04/21)

Description:
==========
Digital Cartographic Model (DCM)

Publisher / Source:
==========
Ordnance Survey Ireland (OSi)

Projection= IRENET95_Irish_Transverse_Mercator

Centre Point Coordinates:
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X,Y= 647756.5,768302.0

Reference Index:
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Map Series | Map Sheets
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1:5,000 | 2497
1:5,000 | 2428

Data Extraction Date:
==========
Date= 10-May-2021

Scale 1:4,000

0m 20 40 60 80 100

RESTORATION

The reinstatement provides for localised opportunities for creation and establishment of native species woodlands, and wildflower/ grassland mix. The final land use of the site is proposed as management for habitat creation and wildlife benefit.

The stockpile area to be made level, capped with sub soil and topsoil and grass seeded. Where required additional subsoil and topsoil to be imported to achieve levels as per plan and section.

Where possible natural recolonisation of slopes will be encouraged. If necessary the slopes will be planted with an appropriate wild flower grassland mix.

Quarry Face & Benches:

A well co-ordinated restoration process (in consultation with the IGH) will ensure that representative areas of quarry faces are left unvegetated.

Parts of the upper benches will also be seeded with suitable species of shrubs and climbers to create vegetated ledges. Vegetation and natural colonisation on these benches will encourage growth on the faces and will subsequently break up the natural harshness of the exposed rock face.

Preparation:
The site is to be left in a good condition for the landscaping works.

Topsoil
- The Contractor shall place topsoil in areas that require topsoil to attain finished levels for grass and planted areas. It should be properly graded and levelled.
- The topsoil shall be free of subsoil, stones exceeding 50mm in diameter. It shall be free from rubbish, chemicals, pollutants or other injurious matter. It shall be free from or obnoxious weeds, couch grass, roots or top growth of trees and shrubs.
- The Contractor shall loosen any compacted soil after top soiling operation and protect area from further compaction.

Reinforcement of hedges:
(As necessary)

Plant the hedge in a double row with 300mm between rows, plant each row at 500mm centres.
Plant the first row 500mm from the new fence.
Plant at the depth of the original root collar.
Hedging roots shall be firmed to ensure close contact with the roots.
Firming shall be such as to ensure that the roots will be held securely in the soil and
that the penetration of moisture will not be restricted.
Prune new hedge by a quarter to encourage side shoots and a thicker hedge.

Hedgerow Species:	Size: (Whip)	Spacing:	Density:
Corylus avellana *(Hazel)*	1 + 1	0.5m	10%
Crataegus monogyna *(Hawthorn)*	1 + 1	0.5m	60%
Ilex aquifolium *(Holly)*	1 + 1	0.5m	10%
Prunus spinosa *(Blackthorn)*	1 + 1	0.5m	20%

Wildflower Grassland

Plant regraded side slopes with wildflower grassland mix

% Grasses mix:
Agrostis capillaris Common bent 5%
Festuca rubra ssp commutata Red fescue 25%
Festuca rubra Slender Creeping Red fescue 15%
Cynosurus cristatus Crested Dogstail 35%

% Wild flower mix:
Achillea millefolium Yarrow 1%
Centaurea nigra Common knapweed 3%
Daucus carota Wild carrot 1%
Galium verum Lady's bedstraw 1%
Leucanthemum vulgare Oxeye daisy 2%
Plantago media Hoary plantain 1.5%
Rumex acetosa Common sorrel 1.5%
Sanguisorba minor ssp minor Salad burnet 3%
Silene dioica Red campion 1%

Planting:
All whips are to be min. 1 + 1 (40 - 60cm), high quality obtained from a reputable Nursery.
Whips should be stored in a cool environment not allowing roots to dry out and watered as necessary.
Only take out whips as they are required.

Copse Planting

Natural Colonisation

Once restoration gradients have been achieved, in location where woodland planting is proposed, the ground should be crossripped, topsoiled and prepared.
Tree and shrub species will be planted directly into previously prepared pits incorporating 30gms of approved slow release fertiliser per planting station. Transplant material of height range 300-600 mm, either cell grown or bare root stock as per schedule. Shrub and hedgerow planting would be protected as required by rabbit-proof guards and staked appropriately.
No fertiliser or soil improver will be used in the scrub or grassland areas. The proposed plant species will consist of native species of local provenance, where possible, but as a minimum, of Irish provenance.
This habitat will be allowed to grow to maturity with minimal maintenance and intervention.
Details with respect to tree and shrub copse plating are provided in the following tables.

Tree species: Symbols	Size: (Whip)	Spacing:	Density:
Dominant species:			
Fraxinus excelsior *(Ash)*	1+1	1.5m	20%
Quercus robur *(Oak)*	1+1	1.5m	30%
Sub dominant species:			
Betula pendula *(Weeping Birch)*	1+1	1.5m	10%
Betula pubescens *(Common Birch)*	1+1	1.5m	10%
Sorbus aucuparia *(Mountain Ash)*	1+1	1.5m	15%
Prunus avium *(Wild Cherry)*	1+1	1.5m	15%

Edge species: Symbols	Size: (Whip)	Spacing:	Density:
Crataegus monogyna (Hawthorn)	1 + 1	1.5m	20%
Prunus spinosa (Blackthorn)	1 + 1	1.5m	10%
Corylus avellana (Hazel)	1 + 1	1.5m	20%
Ilex aquifolium (Holly)	1 + 1	1.5m	10%
Rosa canina (Dog Rose)	1 + 1	1.5m	10%
Ulex europaeus (Gorse)	1 + 1	1.5m	10%
Sambucus nigra (Elder)	1 + 1	1.5m	10%

Fencing:
All planted areas may need to be fenced off to protect from livestock, rabbits & deer.
This will need to be assessed prior to planting.

Defects liability period:
The defects liability period shall be 12 months for tree and shrub planting from practical completion.

Maintenance:
- To be carried out as necessary for one season *(April to October)* from practical completion as part of the defects liability period.
- Trees and shrubs are to be checked for pests & diseases and damage. Straighten and firm in trees that may have loosened in the ground. Any die back or damaged branches should be pruned out to sound growth to encourage healthy growth.
- During the defects liability period any trees or shrubs that die or are not thriving, or do not develop a full canopy are to be replaced at the earliest opportunity prior to the end of defects liability period.

Management:
Keep areas weed free from perennial weeds for the period of 1 year following the defects liability period.
Between 5 - 7 years, thin out poor specimen tree and shrub / edge species.
Leave approx. 4 - 6m between good specimen trees and 2 -3m between shrub / edge species..

Between 12 - 15 years, selectively thin tree and shrub / edge species retaining good specimens.
Leave approx. 6 - 12m between good specimen trees, leaving the dominant trees i.e.) Oak at the greater distance.
Shrub / edge species can be left at 4 - 6m spacings.

Legend

Ecological Shelving Bank Detail

Water depth 0.5- 2m

Good light penetration

Vigorous plant growth

Abundant invertebrates

Main bird usage - feeding by diving ducks, grebes

Water depth 0.5

(a) Colonisation by emergent plants
Main bird usage - nesting habitat

(b) Open water
Main bird usage - feeding by dabbling ducks, ducklings and waders

(c) Exposed mud
Main bird usage - feeding by some ducks and waders.

Seasonally flooded

(a) Willow carr
Main bird usage - nesting habitat, songbird feeding

(b) Wet grassland
Main bird usage - wader feeding and nesting habitat, feeding by grazing and dabbling wildfowl, wader feeding and nesting habitat.

Planting of Pond Areas:

Marginal planting in Quarry Lake	Spacing:	Density:
Phragmites australis (Common reed) Typha latifolia (Bulrush)	100m² blocks, plant @ 1m centres 100m² blocks, plant @ 1m centres	n/a n/a
Iris pseudacorus (Yellow flag) Schoenoplectus Lacustris (common durush)	100m² blocks 2 nos. plants per metre	20% 20%
Sparganium erectum (Branched bur-reed) Glyceria maxima (Reed sweet-grass)	2 nos. plants per metre Plant in groups of 10	15% 15%
Floating Vegetation: Nuphar lutea *(Yellow water lily)*	groups of 10 2 nos. groups of 10	n/a n/a

Trees adjacent to Ponds	Size: (Whip)	Spacing:	Density:
Alnus glutinosa *(Alder)*	1 + 1	Random	30%
Betula pendula *(Weeping Birch)*	1 + 1		50%
Salix alba *(Willow)*	1 + 1		20%

Lands under Operators Control (c.11.7 ha)

Application Area (c. 11.4 ha)

Wayleave

Fence

Gate

Contours *(mAOD)*

Irish Transverse Mercator (ITM) geographic coordinates

Sections (Refer to Figure 3.3)

87.7 Spot Levels *(mAOD)*

SW1 Surface Water Monitoring Points

PW MP Groundwater Monitoring Points & Wells

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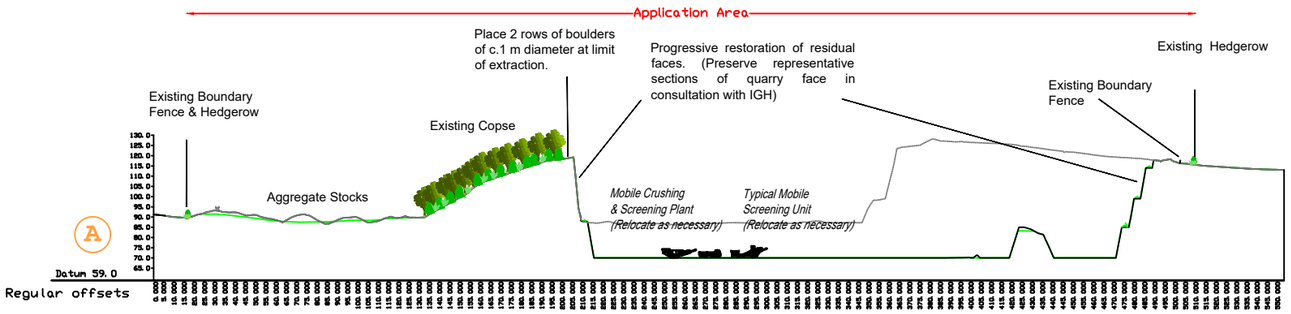
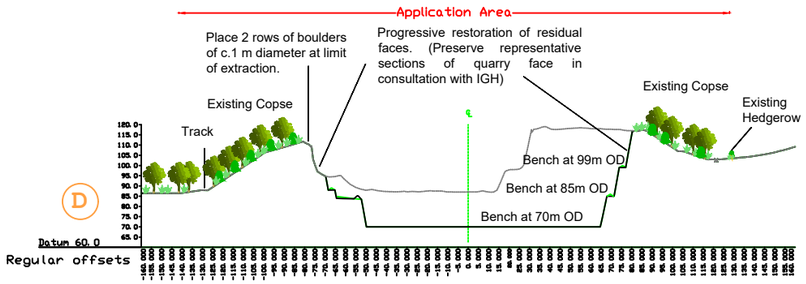
CLIENT
Lagan Materials Ltd

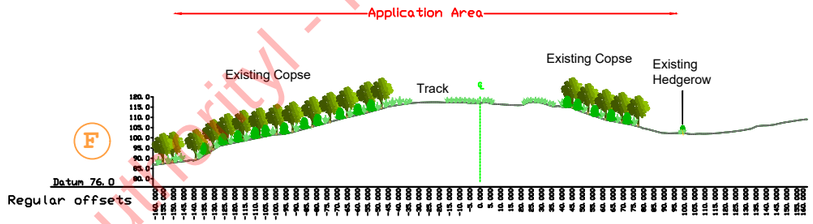
DRAWING
Landscaping & Restoration Plan

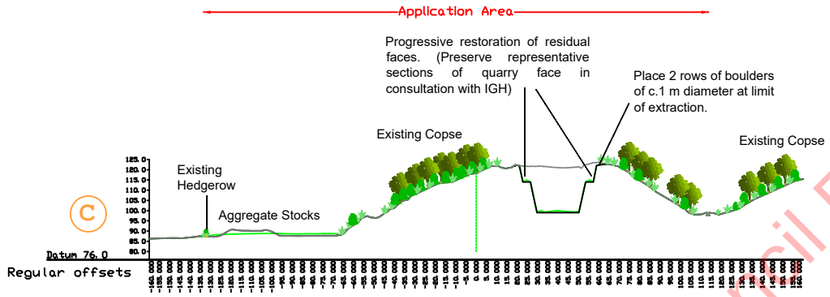
LOCATION
Deerpark, Castlepollard, Co. Westmeath

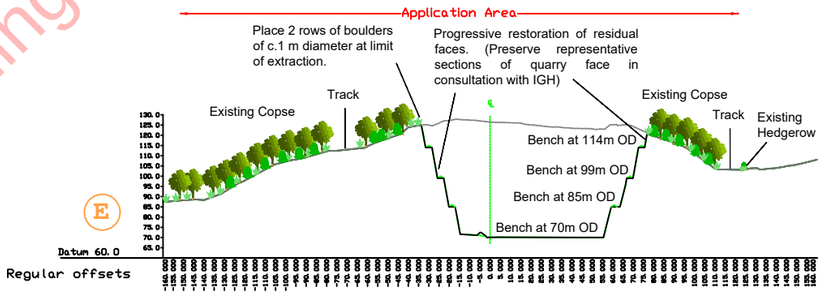
Drawn by: John Sheils	Scale: 1: 4,000	
Checked by: John Sheils	Job No.: JSPE 277	
Date: 20/12/21	Figure No.: 3.2	Rev.: 0

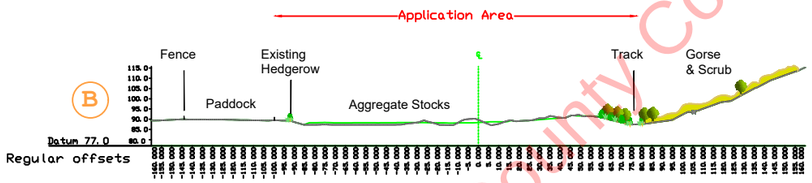












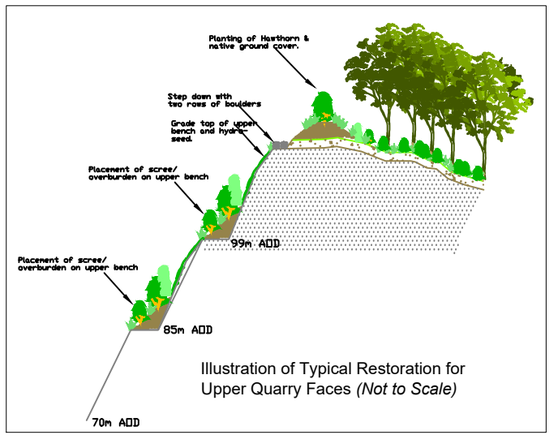


Illustration of Typical Restoration for Upper Quarry Faces *(Not to Scale)*

NOTES:

1. All Dimensions in metres (m)
2. Elevation Levels - metres Above Ordnance Datum (mAOD)
3. For Planning Purposes Only. Do not scale for setting out.
4. Survey derived from aerial photogrammetric point-cloud survey (7/04/21)
5. Cross Sections B to F - Centre Line (C/L) offset distance from Cross Section A (Refer to Figures 3.1 & 3.2).

Scale 1:3,000

0m 20 40 60 80 100

Legend

- *Existing Ground Profile (mAOD)*
- *Extraction Profile (mAOD)*
- *Final Restoration Profile (mAOD)*

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CLIENT	Lagan Materials Ltd
DRAWING	Cross Sections
LOCATION	Deerpark, Castlepollard, Co. Westmeath

Drawn by: John Sheils	Scale: 1: 1000	
Checked by: John Sheils	Job No.: JSPE 277	
Date: 20/12/21	Figure No.: 3.3	Rev.: 0

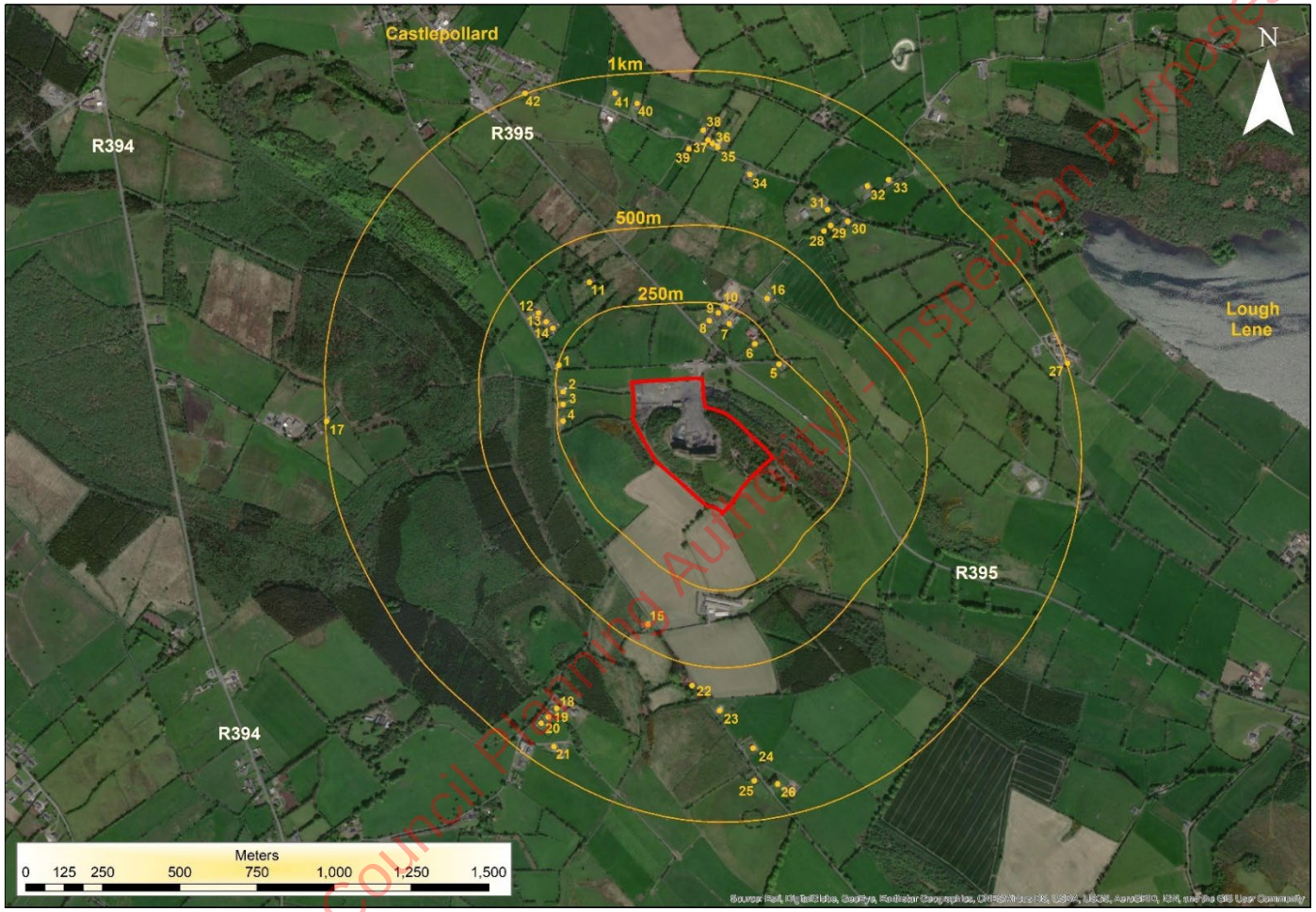
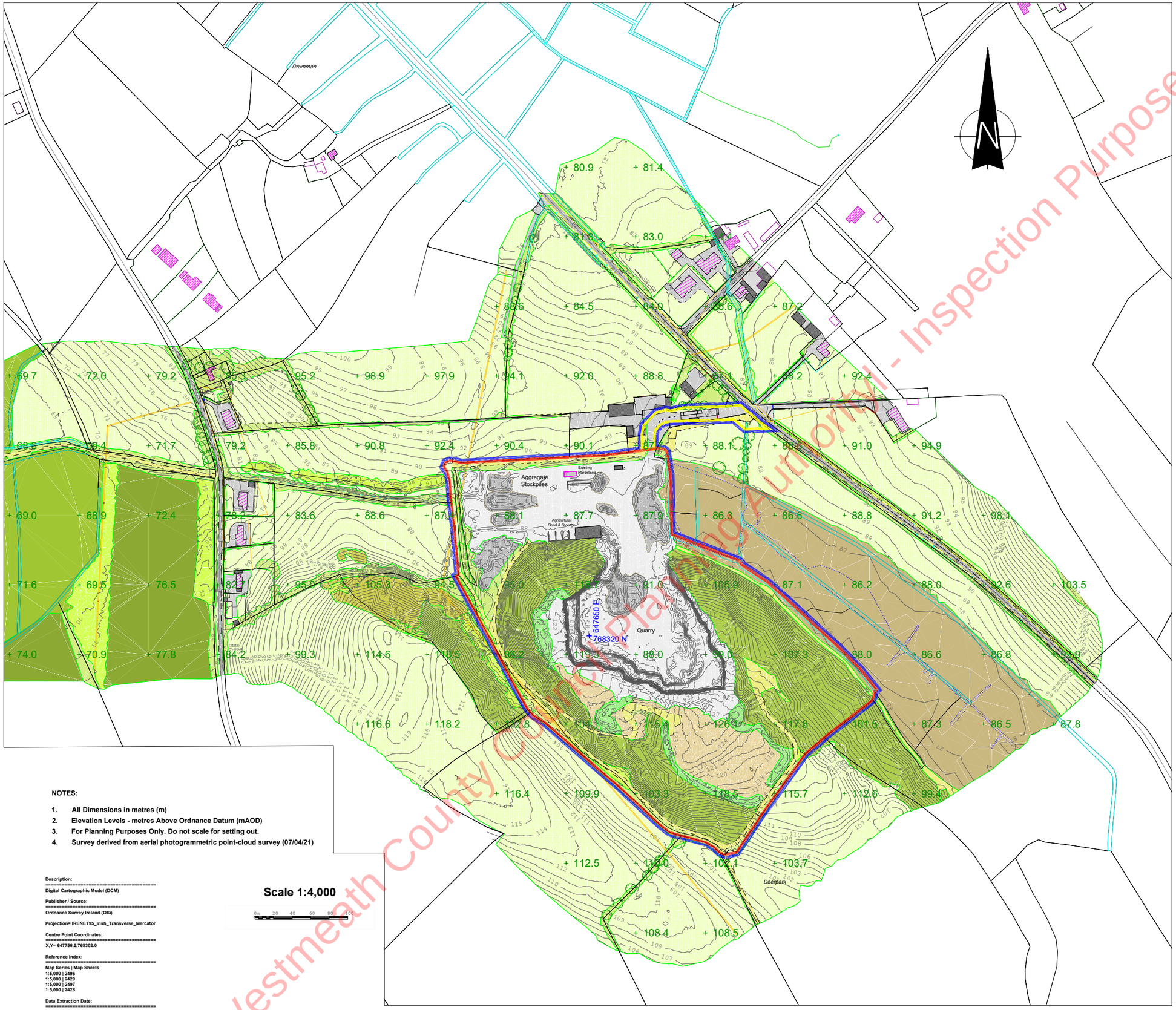


Figure 4.1 Aerial Image of Area around Castlepollard Quarry.

Red line denotes boundary of landholding. Yellow dots denote residences within 250 m (n = 10), 500 m (n = 16), and 1 km (n = 42) limits. Note proximity to R395 Regional Road and Castlepollard - outskirts shown at upper left centre of image. Note residence no. 5, which is located c. 160 m east of the site, belongs to the landowner Mr. & Mrs. Ned Smyth. Rendered in ArcGIS 10.3 using aerial image from ESRI's world imagery.



Legend

- Lands under Operators Control (c.11.7 ha)
- Application Area (c. 11.4 ha)
- Wayleave
- Active Quarries and Mines (ED4)
- Recolonisation bare ground (ED4)
- Dry Calcareous & Neutral Grassland (GS1)
- Mixed Broadleaved Woodland & Scrub Mosaic (WD/WS1)
- Fence
- Gate
- Contours *(mAOD)*
- 87.7 Spot Levels *(mAOD)*
- Irish Transverse Mercator (ITM) geographic coordinates

NOTES:

1. All Dimensions in metres (m)
2. Elevation Levels - metres Above Ordnance Datum (mAOD)
3. For Planning Purposes Only. Do not scale for setting out.
4. Survey derived from aerial photogrammetric point-cloud survey (07/04/21)

Scale 1:4,000

0m 20 40 60 80 100

Description:
==========
Digital Cartographic Model (DCM)

Publisher / Source:
==========
Ordnance Survey Ireland (OSi)

Projection= IRENET95_Irish_Transverse_Mercator

Centre Point Coordinates:
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X,Y= 647756.5,768302.0

Reference Index:
==========
Map Series | Map Sheets
1:5,000 | 2496
1:5,000 | 2429
1:5,000 | 2497
1:5,000 | 2428

Data Extraction Date:
==========
Date= 10-May-2021

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CLIENT	Lagan Materials Ltd
DRAWING	Habitats Plan
LOCATION	Deerpark, Castlepollard, Co. Westmeath

Drawn by: John Sheils	Scale: 1: 4,000	
Checked by: John Sheils	Job No.: JSPE 277	
Date: 03/11/21	Figure No.: 5.3	Rev.: 0