



Shillelagh Quarries Limited

HEMPSTOWN QUARRY

ElAR Non-Technical Summary



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EIAR Non-Technical Summary

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1 NON- TECHNICAL SUMMARY

1.1 INTRODUCTION

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

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

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

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

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

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

Figure 1-1 shows the regional location of the Site, whilst **Figure 1-2** provides a depiction of the Section 37L planning application area and the EIA project boundary.

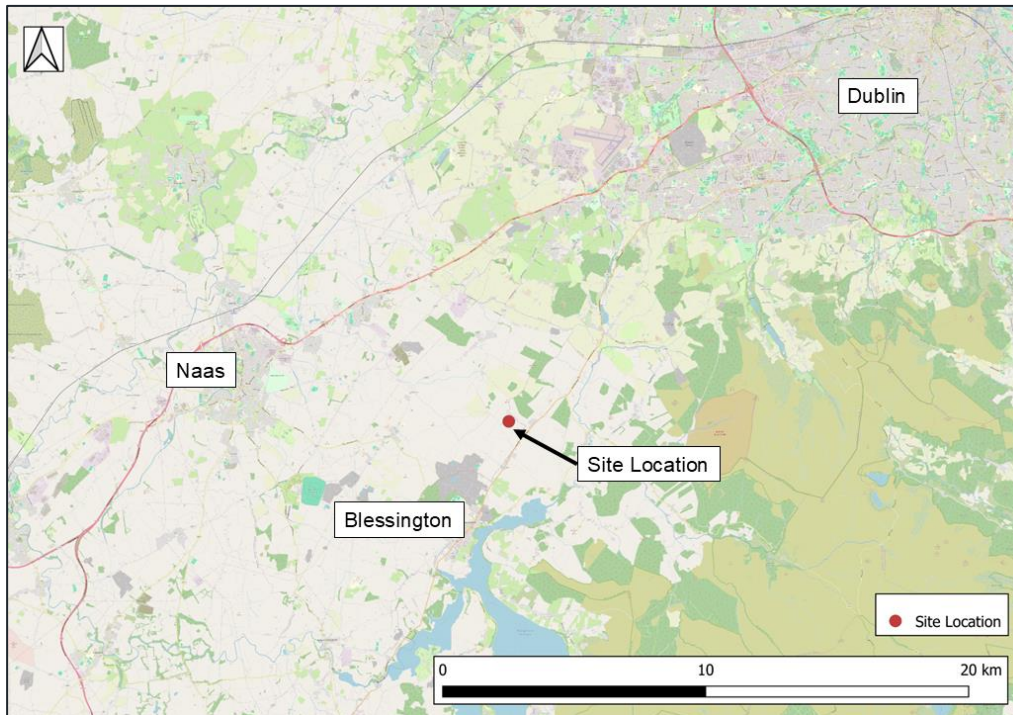


Figure 1-1 - Regional Site Location

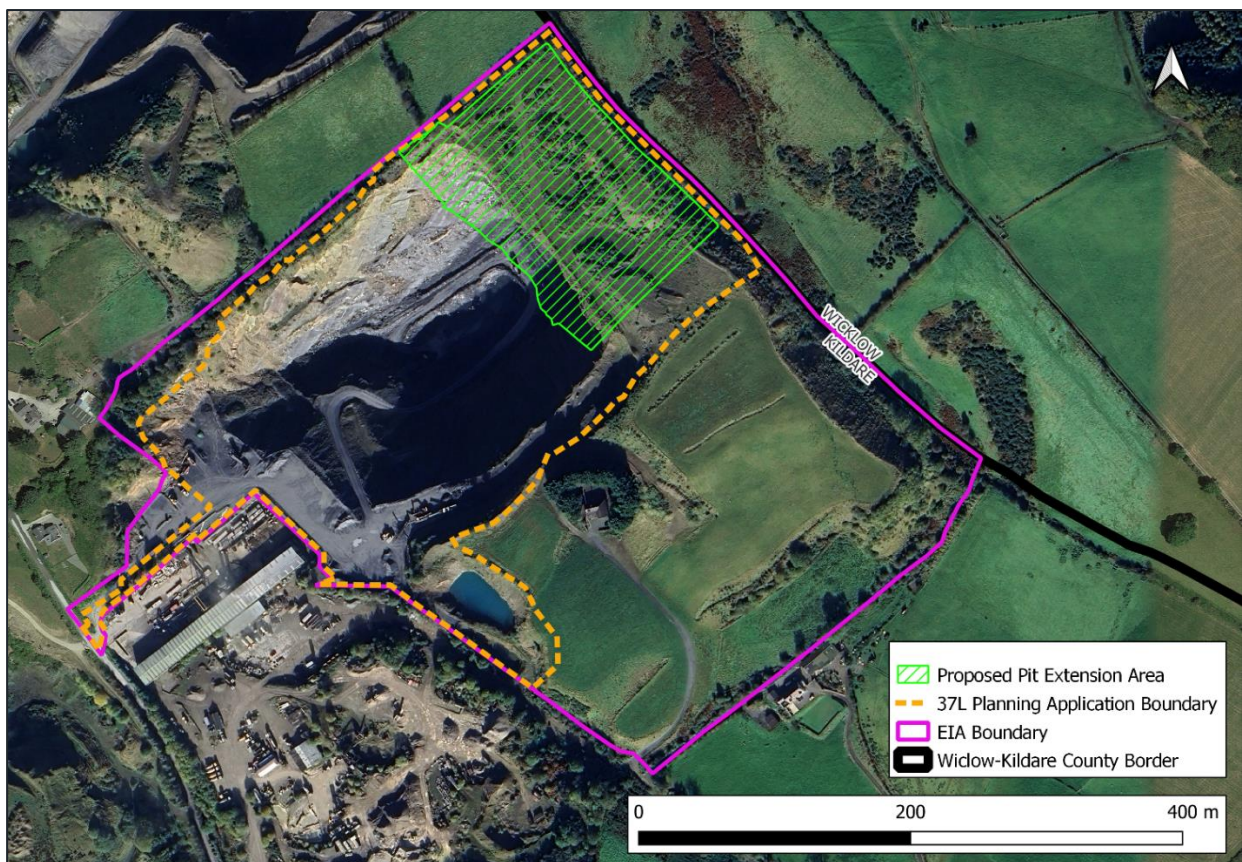


Figure 1-2 – Proposed Pit Extension Area within the lands the subject of the EIAR.

1.2 THE NEED FOR THE DEVELOPMENT AND CONSIDERATION OF ALTERNATIVES

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

The greywacke rock reserve at the subject location is of a proven good quality capable of being used for a range of materials in the construction industry.

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

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

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

In this case, the quarry site represents the predominant land asset upon which the developer's companies and employees rely. The developer is a quarry operator and employer who wishes to maintain and expand this asset. The continued quarry use and sustainable further development is contingent on planning permission to secure future reserve.

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

1.2.1 ALTERNATIVE DESIGNS CONSIDERED AT THE SUBJECT SITE

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

The proposed development utilises the existing primary soakaway which is connected to an overflow soakaway. It is proposed to provide additional temporary holding capacity of collected waters in the

existing quarry void through extension of the existing sump. This approach seeks to maximise use of the topography of the existing quarry floor to manage any capacity pressures on the overflow soakaway during wet periods (i.e. winter months). It also seeks to avoid upgrades to the existing soakaway structures (if required) and thereby avoid the potential for adverse effects to nearby nesting birds (sand martins) and a potential badger sett located adjacent to the primary soakaway.

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

The proposed car parking facilities will provide parking for HGVs and private vehicles, including guest parking on SQL owned lands. It is noted that the introduction of dedicated carparking facilities is intended to avoid reliance on the third-party parking facilities currently used.

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

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

2 PROJECT DESCRIPTION

2.1 PROJECT DESCRIPTION SUMMARY

A full description of the proposed development is provided in Chapter 2 (Project Description) of this EIAR. A high-level summary of the proposed development is provided below.

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

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

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

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

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

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

2.2 PROPOSED EXTENSION OF EXISTING QUARRY

The application site includes the established extraction area of the quarry and a proposed northeastern extension. The existing void is approximately 5.1 ha in area. The quarry extension design (Appendix 2A in Chapter 2 of this EIAR) provides for an extraction area of approximately 1.89 ha lateral extension of the quarry to the northeast of the existing void space (see Figure 1.2).

3 POPULATION AND HUMAN HEALTH

Section Purpose

Section 3 of the EIAR provides an assessment of potential effects of the continued operation of the Site on the surrounding human environment, ecology and biodiversity. This assessment included consideration of both potential effects from the Site and cumulative effects of other extractive or sizable industries in the surrounds of the Site.

Setting and Existing Conditions

The application site located in the townland of Hempstown Commons, Co. Kildare. The study area for this assessment has been determined as the EIA site boundary and a 500 m area around this. The study area is located within the Rathmore Electoral District. Potential effects on the surrounding human environment, within the study area, has been assessed under the following headings:

- Populations;
- Economic patterns (activity and employment);
- Amenity;
- Land-use; and
- Human health and Health and safety.

A total of 17 no. residential dwellings were found to be within 500 m of the EIA boundary; also 3 no. non-residential premises were also identified. The number of residences is based on a field survey, a review of the aerial photography and DCCA Eircode mapping.

Potential Effects and Mitigation

With the application of mitigation measures it is considered that the development will not give rise to significant adverse effects to the surrounding human environment during the operation of the Proposed Development.

The potential direct impact from the Proposed Development on local population growth due to workers migrating to the area is '*negligible (adverse)*'.

Given the size, nature, duration of the Site's operation, and the creation of long-term employment in the surrounding area, it is considered that the Proposed Development will have a '*Low (beneficial)*' impact on employment.

It is considered that the magnitude of impact from the Proposed Development on these local businesses will be '*negligible (adverse)*'.

Given the distance of the amenity areas from the Proposed Development it is considered that they would experience a '*negligible (adverse)*' magnitude of impact.

It is considered that quarrying will result in change in land type and form will have an '*Imperceptible*' effect on the local land-use.

Based on the assessment of impacts (identified above) and embedded management measures employed at the Site, it is considered that the Proposed Development will have a '*negligible (adverse)*' direct or indirect impact on health and safety.

4 ECOLOGY

Chapter 4 of this EIAR provides an assessment of potential impacts of proposed works at the Application Site on ecological receptors (called important ecological features (IEFs)). The assessment included consideration of both potential impacts at the Application Site as a result of the proposed works and, where appropriate, cumulative effects of plans and projects in the surrounding area.

Methodology

The impact assessment has examined survey data gathered in 2024 (desk study and field survey). Field surveys covered habitats, botany and protected/notable protected fauna on lands within the EIA boundary¹. Publicly available species records from within 5km from of the EIA boundary were examined, and habitats within the EIA boundary were assessed for their potential to accommodate the protected or notable species identified. The assessment has also used aerial imagery and environmental emissions monitoring data where applicable to help determine the types of effects likely to occur.

Existing Conditions

The desk study found 12 designated sites to be within 20km of the EIA boundary. Numerous protected/notable species records within 5km of the EIA boundary were also returned by the data search.

Field surveys of lands within the EIA boundary found the main habitat types present to be active quarry (ED4), exposed sand, gravel, or till (ED1), recolonizing bare ground (ED3), and improved agricultural grassland (GA1). Small amounts of buildings and artificial surfaces (BL3), artificial lakes and ponds (FL8), dry meadows and grassy verges (GS2), hedgerow/treeline (WL1/WL2), and continuous scrub (WS1) were also recorded. The surveys also found evidence of, or suitable habitat for, the following protected/notable species:

- Two potential badger setts;
- Sand martin burrows (approximately 25) near the main soakaway;
- Suitability for breeding amphibians to breeding in the overflow soakaway; and
- Suitable habitat for common lizard.

Potential Effects

Significant impacts were identified as a result of habitat loss (hedgerow/treeline, loss of suitable reptile refuge habitat (disused tyres in the north of the Application Site)), which would result in loss of foraging, shelter, commuting and/or nesting habitat for breeding birds, bats, badgers, reptiles and small protected/notable mammals. Significant impacts were also identified in relation to the potential

¹ As detailed further within the body of the Chapter, it was not possible to survey a buffer of the EIA boundary, due to no access being permitted outside of the ownership boundary.

spread of invasive species to/from the Application Site. All impacts were significant at a local scale only.

Mitigation, Compensation and Enhancement

Mitigation has been proposed through movement of suitable reptile refugia to an alternative location within the EIA boundary ahead of works commencing, and pre-works nest checks for breeding birds, in the event that works will occur during the breeding season. Further, in relation to the removal of some of the cherry laurel present on the Application Site, relevant biosecurity guidelines will be adhered to, to prevent the continued spread of invasive species.

Proposed compensation measures predominantly consist of habitat reinstatement as part of a Restoration Plan (see Appendix 2B in Chapter 2 of the EIAR for further details). Enhancement measures are also proposed in the form of increasing flora species diversity through planting of native species, and through installation of bat boxes at appropriate locations within the EIA boundary to enhance suitable bat habitat. The provision of new habitat will restore suitable habitat for breeding birds, bats, badgers, reptiles and small mammals.

It was considered that following the implementation of the mitigation, compensation and enhancement measures described above, there would be no significant residual impacts.

5 LAND, SOILS AND GEOLOGY

Section Purpose

Section 5 of the 37L EIAR provides an assessment of potential effects of the continued operation of the Site on the surrounding land, soils and geology, from December 2019. This assessment included consideration of both potential effects from the Site and cumulative effects of other extractive or sizable industries in the surrounds of the Site.

Setting and Existing Conditions

The site is on lands at Hempstown Commons, Co. Kildare, along the Kildare/Wicklow border. Regionally, the nearest town is Blessington which is approximately 4 km to the southwest of the site. The site comprises lands which are currently used for quarrying activities.

The site is comprised of a quarry void to the north east of the site boundary where the rock material is subject to extraction, two soakaway ponds are located to the southeast of the site where water from the base of the quarry void is pumped to and an eastern area where material is stockpiled and stored.

There are limited soils remaining in the existing extraction area due to extraction activities carried out onsite under the previous planning permission. The subsoils underlying the Site are composed of gravels derived from Limestones. Glacial and fluvial deposits (known locally as the Blessington Gravels) are generally thick in the area, with deposits commonly greater than 30 metres in thickness, into the base of the valleys. Information from site investigations indicate that the sands and gravels of the drift thicken to the south of the Site, towards the base of the valley.

The bedrock underlying the site is of the Pollaphuca Formation, which is described as consisting of coarse, graded greywackes, medium grey in colour, and dark grey shales.

The site is located entirely within the Slate Quarries (KE004) County Geological Site, which is described as a series of quarries on the hillside and the primary rock type is Silurian slates of the Slate Quarries Formation. Although it should be noted that extraction at the quarry will be of the greywackes of the Pollaphuca Formation, not the Slate Quarries Formation.

There have been no landslides recorded within 1 km of the site and there are also no karst features in this area. The EPA lists the site as being within an area of 'High' radon potential, where 1 in 10 homes are estimated to have high radon levels.

It is noted that the risk of instability of soils and/or bedrock which would result in a partial collapse of material can occur in any quarry environment.

Potential Effects and Mitigation

Four main sensitive receptors were identified in the impact assessment of the site: mineral or aggregate reserves, land (soil/sub-soils) at and immediately adjacent to the Development, human health (workers during operation) and geological heritage. These are classified as of low, low, high and medium respectively.

The main potential impacts and associated effects considered were as follows:

- Land contamination from site operations
- Health of works in contact with contamination

- Change in land use by the advancement of the extraction area
- Removal of topsoil at the Site
- Removal of bedrock at the Site
- Destabilisation and/or subsidence of unconsolidated soils, sub-soils or rock faces
- Changes to designated CGS site

Given the implementation of embedded mitigation measures that are implemented as routine on the site, it is considered that there is limited potential for contamination to lands from leaks and/or spills. Previously, no spills or leaks have been recorded onsite by the applicant.

Under the current programme provided for fluctuations in market demands for the aggregate. The duration of the extraction phase is therefore classified as 'medium-term' by the Environmental Protection Agency's (EPA) 2022 'Guidelines on the information to be contained in environmental impact assessment reports'. The Proposed Development totals a volume of ca. 703,000 m³ (1,757,500 tonnes) of rock resource

The nature of the development will involve the removal and storage of soil; however, it is noted the soils will not be transported off-site. By the nature of quarrying, the greywacke bedrock will be removed with quarrying, which will result in a direct and irreversible impact on the Site. However, the removed material has a medium to high resource potential and will be used in future construction projects.

The site is located in an area of low seismic activity and the proposed extraction plan has incorporated industry standard for slope design, thus mitigating any potential geotechnical / geohazard risks and the existing quarry is well maintained and managed.

The site is located within Slate Quarries County Geological Site (CGS)(KE004). The management / promotion of this site states 'to include these working quarries as a CGS in no way is intended to limit the operations, but simply to mark their value as a place to see local geology well exposed, and to make the powerful connection between geology and people's everyday lives.' It should be noted that the quarry is located entirely on private lands owned by the applicant. Furthermore, there are limited viewpoints into the quarry from surrounding public lands (.e.g. local roads) with views of bedrock exposures within the quarry largely restricted due to local topography and hedge/treelines. Therefore, it is considered that the operations at the Site will not negatively impacted the CGS management objectives.

The assessment concludes that the proposed development site and associated activities are not likely to give rise to significant adverse effects on the land, soil or geology at or surrounding the site.

6 WATER

Section Purpose

Section 6 of the EIAR provides an assessment of potential effects on the water environment from the continued operation of the Site and future extension with the Proposed Development. This assessment includes consideration of potential effects from the Site with appreciation of existing and proposed mitigation measures.

Site Setting and Existing Conditions

The Site is on land at Hempstown Commons, Co. Kildare, along the Kildare/Wicklow border. The Site comprises lands that are currently used for quarrying activities.

The Site comprises of a quarry void in the northern part of the Site, where the rock extraction occurs. Two soakaway ponds (large soakaway and small overflow) are located in the southern part of the Site, where water from the base of the quarry void is pumped to.

The lateral extension of the quarry will be by ca. 1.89 hectares to the northeast of the current quarry void. The maximum depth of extraction will be ca. 213 mAOD in the extension area, which is no deeper than the current base of quarry..

Glacial and fluvial deposits are commonly greater into the base of the valleys in the area. Site investigations indicate that the glacial sands and gravels thicken towards the south of the Site (to a maximum of 9 m), towards the base of the valley. The bedrock underlying the Site is the Pollaphuca Formation, which consists of coarse graded greywackes and dark grey shales.

There is a catchment divide to the north of the Site, which closely follows a northeast trending ridgeline. The Goldenhill river is located within 1.2 km to the southeast of the Site and flows south to the Poulaphouca Reservoir. The Poulaphouca Reservoir is located approximately 2.8 km to the south of the Site and is designated as a Special Protection Area (SPA) and National Heritage Area (NHA). It is likely that any surface water flows within the vicinity of the Site will flow towards the Goldenhill river, based on the catchment divide. The Red Bog SAC is located approximately 1.2 km southwest of the Site and is a similar elevation to the southern boundary of the Site.

Baseline Conditions

Both the Goldenhill river and Poulaphouca Reservoir are classified as 'good' under the WFD (2016-2021) Status.

Sampling of surface water quality from the large soakaway pond shows that nitrate and nitrite exceeded the GTV and AA-EQS in 2024 on two occasions. The source of the nitrate and nitrite is likely to be from agricultural processes and run-off from the farmed fields.

Arsenic exceeded the GTV and AA-EQS in the soakaway in 2024. The exceedances indicate that there are naturally elevated concentrations of arsenic in the seepage collecting in the quarry void, which are then transferred to the soakaway pond (SW01). Elevated groundwater arsenic concentrations have been found to be associated with poorly productive greywacke or shale bedrock aquifers, similar to the Pollaphuca Formation in the study area.

There are five existing monitoring wells monitoring groundwater levels and quality on the Site (GW1 to GW5). Groundwater levels are generally stable, which is reflective of the isolated nature of the

groundwater within fractures of the bedrock greywacke and shale. However, there does appear to be a reduction in water levels in response to periods of reduced rainfall across some of the monitoring wells.

The GTV threshold for arsenic has been exceeded at GW4 and at the Wheelwash borehole, although at significantly reduced concentrations in comparison to those for the soakaway ponds. Elevated arsenic concentrations are interpreted to be naturally occurring. Other exceedances were for barium (naturally occurring in bedrock) and for nitrate (in GW1 and GW5 in close vicinity to farmed land).

The conceptual section for the Red Bog indicates that it is highly unlikely that there is any hydraulic connectivity between the quarry void and the Red Bog, due to being situated in different groundwater bodies. The conceptual section for the Poulaphouca Reservoir SPA indicates a potential linkage (although likely limited) between the soakaway ponds and the Goldenhill river, which in turn feeds the reservoir.

The Site water balance indicates that the majority of the discharged water (combination of rainwater run-off and seepage) recharges the groundwater in the Pollaphuca Formation bedrock beneath the soakaway ponds and possibly the quarry void.

Potential Effects and Mitigation

Six sensitive receptors were identified in the impact assessment of the site; surface water (Poulaphouca Reservoir SPA and Goldenhill River), groundwater resources, infrastructure, local abstractions and human health. The Poulaphouca Reservoir SPA and human health were ranked as having the highest sensitivities (High).

The main potential impacts considered were as follows:

- Changes in groundwater or surface water quality due to excavation or dewatering
- Changes in surface water or groundwater quality or quantity from discharges/infiltration from the soakaway and overflow ponds
- Changes in surface water or groundwater quality from wastewater generated by on-Site welfare, holding tank and wheel wash facilities, uncontrolled material storage or hydrocarbon leaks
- Increased flooding risk due to elevated rainfall

Embedded mitigation measures will be in place during the Proposed Development, which will reduce the potential effects to the water environment. Further mitigation is proposed for: install of a bypass separator prior to discharge to the soakaway pond, install of a shallow monitoring bore in the sand and gravels south of the soakaway pond, extension of the quarry sump for increased capacity, implementation of level monitoring in the soakaway and overflow ponds, communication with local water users to determine status of private water wells, the water quality in the Goldenhill River, both downstream and upstream of the Site be tested, to reduce potential effects.

The impact magnitude combined with the sensitivities of the identified receptors gives adverse effects that are mostly **imperceptible or slight** with nothing higher than **slight**. Human health is considered as a secondary effect of changes to quality for the local abstractions Poulaphouca Reservoir (assigned **imperceptible** and **slight** level of effect respectively).

The assessment concludes that the operations at the Site will not give rise to significant (above slight) adverse effects on the water environment during the Proposed Development.

7 AIR QUALITY

Section Purpose

Section 7 of the EIAR provides an assessment of potential impacts associated with the Proposed Development on dust soiling and local air quality. The assessment included consideration of both potential impacts from the Proposed Development alone and the cumulative impacts associated with the operation of the Proposed Development in combination with nearby sources.

A qualitative assessment of impacts of mineral dust and particulate matter (PM10) derived from the quarrying activities has been undertaken in line with the Institute of Air Quality Management (IAQM); 'Guidance on the Assessment of Mineral Dust Impacts for Planning'. A qualitative assessment of the impact of plant and non-road mobile machinery (NRMM) has also been undertaken commensurate the IAQM's 'Guidance on the Assessment of Dust from Demolition and Construction'.

The impacts have been assessed in the context of relevant national, regional and local air quality policies.

Potential Effects and Mitigation

Baseline air quality conditions have been determined from a combination of boundary dust monitoring data collected at the Proposed Development monitoring data gathered from 2020 to 2024 together with EPA monitoring data for nitrogen dioxide (NO₂) and particulate matter (PM10 and PM2.5). Whilst there have been instances when boundary dust deposition rates have exceeded the accepted thresholds over the past five year, they have, on the whole (for at least 85% of the time), been less than dust deposition limit value of 350 mg/m²/day. Likewise, concentrations of all air pollutants are well below the relevant standards. Wind speed and direction data indicative of the prevailing conditions within the study area have been obtained from the Met Éireann station at Casement Aerodrome, Baldonnell, County Dublin, approximately 10km north-northeast of the Proposed Development; these have been used to inform the mineral dust assessment.

Potential mineral dust emissions associated with quarry workings are:

- Movement of full and empty trucks along haul roads;
- Stripping of subsoil and overburden;
- Loading and movement of overburden to dump areas;
- Blasting and rock breaking;
- Extraction of materials;
- Loading of materials;
- Unloading of overburden for restoration; and
- Wind erosion at dump areas and exposed faces.

Mineral dust impacts are not expected beyond 400m from the EIA boundary, therefore all receptors (human sensitive and non-sensitive) within this distance have been considered. Emissions of oxides of nitrogen (NO_x) and particulate matter from site plant and NRMM have the potential to increase NO₂, PM10 and PM2.5 concentrations at sensitive human receptors within 200m of the EIA site boundary. Impacts associated with both have been assessed as imperceptible (i.e., negligible) and no significant effects are anticipated.

Mitigation measures to minimise the potential impacts from the Proposed Development will be in place throughout the operation of the Proposed Development, no further measures are required.

8 CLIMATE

Section Purpose

Section 8 of the EIAR provides an assessment of potential effects of the continued operation of the site on the surrounding climate. This assessment included consideration of both potential effects from the site and cumulative effects of other extractive or sizable industries in the surrounds of the site.

Setting and Existing Conditions

The application site is located in the townland of Hempstown Commons, Co. Kildare. The site is located within an area that has been historically used for quarrying. The current climate at the site is temperate maritime.

Potential Effects and Mitigation

For the Proposed Development the most applicable climate variables and hazards to consider are:

- Increasing precipitation affecting groundwater levels;
- Fluvial flooding;
- The effects of colder weather extremes effecting site operations; and
- Potential drought conditions from prolonged heat.

The assessment and combination of the site's climate 'Sensitivity' and 'Exposures' have shown, overall, that the site is at a low risk from climate hazards and is considered to be Not Significant. Adaptions have been inbuilt into the site as the area of extraction is the most exposed to potential climate impacts. Good site management in terms of groundwater monitoring and the good management of site excavations and run-off management during very extreme rainfall or flooding events have been incorporated into the design and operation of the quarry site. The overall impact from climate hazards at the site is considered to be imperceptible and is therefore effects are considered to be not significant.

The development is not considered to be of a sufficient scale to have had the potential to impact the regional or local climate in any significant manner. The site is not predicted to have any significant effects on local prevailing weather conditions, nor increase the potential of flooding in the surrounding area. Quarry operations during operation have the potential to result in a loss of soil organic carbon in form of CO². Given the small area of stripping that will occur, the liberation of soil organic carbon and impact on the climate is considered to be imperceptible.

The following mitigation measures are proposed to limit vehicle and plant emissions from the mining activities:

- No vehicles or plant will be left idling unnecessarily;
- Vehicles and plant will be well maintained. Should any emissions of dark smoke occur (except during start up) then the relevant machinery will be stopped immediately, and any problem rectified before being used;
- Engines and exhaust systems will be regularly serviced according to the manufacturer's recommendations and maintained to meet statutory limits/opacity tests; Full loads used in road haulage in order to minimise the carbon footprint per load of exported materials;

- Site management will continue to explore energy efficiencies and incentives in the Site's electrical infrastructure and management practices to optimising energy consumption and GHG reduction in its operations. The energy reduction and efficient use will be promoted in areas of the Site including efficient site lighting using LED lighting.
- Undertake soils stripping during wetter periods (in as far as reasonably practical) to ensure carbon losses are reduced compared with warmer drier periods; and
- Minimising the double handling of materials.

Overall, the impacts of the proposed development on the climate are considered to be not significant.

9 NOISE AND VIBRATION

Section Purpose

This section of the EIAR has considered noise and vibration impacts associated with the proposed quarry operations. The assessment has comprised characterisation of the baseline noise and vibration environment, adoption of appropriate evaluation criteria, prediction of noise levels at identified NSRs, evaluation against adopted criteria and specification of appropriate mitigation.

Setting and Existing Conditions

A programme of regular noise monitoring was undertaken by the quarry operator, from the years 2020 to 2024. Measured noise levels due to operation of the quarry were not in exceedance of daytime target levels. Exceedances that occurred at monitoring position 2 were found to have been caused by road traffic and operational noise from neighbouring developments.

The historical hours of operation related to the excavation and processing of material between 08:00 - 18:00, Monday to Friday and between 08:00 - 14:00 on Saturdays. During the hours of 07:00 – 08:00 activities were limited to loading and transporting of processed material. No activities were conducted on Sundays or public holidays.

Potential Effects and Mitigation

Operational noise from the quarry has been predicted for one operational scenario, for proposed daytime operations. The modelled scenario followed a highly conservative approach to determine the likely 'worst-case' noise levels at NSRs. Despite this approach the predicted noise levels are well within the daytime levels recommended by the EPA Environmental Management Guidelines – Environmental Management in Extractive Industry. Predicted noise levels from quarry operations have been found to be 'not significant'. Vibration monitoring undertaken from 2020 to present resulted in no exceedances in the specified vibration limits. The probability of adverse comments due to blasting activities was low, and measured air overpressure levels were substantially lower than the levels which would see structural damage to windows.

No significant noise or vibration impacts have been identified throughout the operational life of the quarry.

10 ARCHAEOLOGY AND CULTURAL HERITAGE

Section Purpose

Chapter 10 of the EIAR provides an assessment of potential impacts of proposed works at the Application Site on cultural, archaeological and architectural heritage resources in the area surrounding the site (called the study area). This assessment included consideration of both potential effects from proposed works at the Site and cumulative effects of other planned works or projects in the surrounds of the Site.

Setting and Existing Conditions

There are no known heritage assets within the quarry extents. There are two heritage assets within the 500m study area comprising two Cists, one of which was inscribed by Rock Art.

Potential Effects and Mitigation

The application development will have no impact on any known heritage assets within the surrounding area.

11 LANDSCAPE AND VISUAL

Section Purpose

Section 11 of the EIAR provides an assessment of potential effects of the continued operation of the Site on Landscape and Visual Impact.

This assessment included consideration of potential effects on the landscape and visual resource, which may have occurred, are occurring or can reasonably be expected to occur because of quarrying and restoration carried out by the applicant.

Setting and Existing Conditions

Landscape character is described in terms of the following:

- Landform and drainage;
- Vegetation land use;
- Centres of population and houses;
- Transport routes; and
- Recreation and public amenities.

The existing operational quarry has been in use since the mid 1900's, while the (broader) Application Site comprises lands that are currently used for quarrying activities. The site is accessed via a privately-owned laneway connecting to a local/third class road, the L6030.

A precast concrete manufacturing facility is located adjacent to the west of the Application Site and shares a roadside entrance with Shillelagh Quarries. The boundaries of the application site mostly comprise of hedgerows and areas of scrub.

The study area is made up of two distinctive characters. There is a hill range running northeast-southwest through the study area which separates County Wicklow (i.e. east of the range) from County Kildare (i.e. west of the range).

There are population centres located approximately 3-4km away, with Naas approximately 9km to the west.

The most notable transport route in the study area is the N81; a national road connecting the M50 (i.e. suburban Dublin) with Tullow in County Carlow. There are a couple of regional roads in the study area, but otherwise the study area is populated with a network of local/third class roads serving the local community.

There is a reservoir in proximity to the site and the Wicklow Mountains located approximately 6km away, with these sites designated as Areas of Outstanding Natural Beauty, with walks and scenic drives around these areas.

Potential Effects and Mitigation

In terms of landscape impacts, the site displays a robust set of features that will help the proposed quarry extension to assimilate, absorb and integrate itself into the surrounding landscape of the central study area and its documented landscape character. This much-modified and ever-evolving landscape where quarrying sits comfortably alongside pasture, tillage, commercial forestry. The proposed quarry extension would merely represent a minor increase in the footprint of that scenario within the context of an existing quarry operation of a larger scale. In spite of this, it cannot be

ignored that the application site is located within a Kildare County Landscape character Area that is designated as having a “high sensitivity.” Furthermore, the proposed quarry will result in a distinct and permanent alteration to the topography and drainage of the site.

On balance, the significance of landscape impact is not considered to be any greater than **Slight** within the application site and its immediate surrounds (<100m), and reducing thereafter with increasing distance and broader context where limited visibility of both the existing quarry pit and its proposed extension afford little change to the prevailing landscape character.

In terms of **visual impacts**, it ought to be remembered that any quarrying operation has the potential to be a conspicuous and severe element in any landscape: while most people will perceive it as an economic gain for the local community, others can concurrently perceive it as devaluing, degrading or scarring that landscape. In balance, such perspectives are influenced by the precedence, scale, shape and duration of the proposal, and how it may complement or contrast with its immediate surroundings, as well as the impact that proximity of the quarry to local/neighbouring properties or roads can be a major determinant in shaping such perspectives.

Weighed against that is the inherent visual absorption of the central study area, largely made possible by mature, tree-lined hedgerows, forestry and the same undulating terrain that makes quarrying such a popular pursuit. Furthermore, the site of the proposed pit extension is largely obscured from most receptors by landform within and around the site itself. In addition, where any aspect of the proposed extension can be discerned, it is in the context of the existing quarry and other opencast quarries in the vicinity.

Thus, the range of potential visible impacts that are likely to be generated as a result of the proposed development is notably low. An analysis of eleven Viewshed Reference Points and five illustrative views within the study area varied simply from imperceptible (at all but one location), to Slight-imperceptible from VP5, which is located on a lightly populated farmed ridge the opposes the hill range that hosts the site. This is the only location to afford relatively close and clear views towards the site at an elevation great enough to see the proposed quarry pit extension. Overall, this is a distinctively low range of likely to visual impacts for most proposed development; even more so for an open cast quarry extension upon an evident hillside.

Given the localised and low-order landscape and visual impacts that were assessed for the proposed development in its own right, the potential for notable cumulative effects is also deemed to be low.

Based on the assessment of landscape effects, visual effects and cumulative effects contained herein, it is considered that the proposed Hempstown Quarry extension will not give rise to any significant effects in EIA terms.

12 TRAFFIC AND TRANSPORT

Traffic flow diagrams were built to model existing vehicular counts through the nearby roads/junction network. Industry recognised growth factors were applied to these counts to establish base flows for future years of study and the percentage increase caused by the generated traffic was calculated. A detailed analysis of the L6030/site access and the N81/L6030 junctions was undertaken to determine how efficiently they operated once the development had opened. All calculations confirmed that both junctions operated well within capacity and showed no adverse signs of queuing on commencement of the proposed quarrying operations.

To ensure that operations take place within lands owned by the Applicant, an amended access haul route alignment through the first portion of the site is proposed. To facilitate this realigned access, it was necessary to relocate existing plant (wheelwash and weighbridge) and car parking to an alternative position within the site. The new access haul route design is achieved within the curtilage of the Applicant's lands with the alternative location for the plant/car parking presenting no impediment for vehicles accessing/egressing the site.

13 MATERIAL ASSETS

Section Purpose

Section 13 of the EIAR provides an assessment of potential effects of the continued operation and extension of the Proposed Development on material assets. This assessment included consideration of both potential effects from the development and cumulative effects of other extractive or sizable industries in the surrounds of the development.

Material assets are physical resources in the environment, which may be of human or natural origin. The objective of the assessment is to ensure that these assets have been used in a sustainable manner with respect to operations at the development.

Setting and Existing Conditions

The development is located in the townland of Hempstown Commons, Co. Kildare. The development is located within an area that has been historically used for quarrying.

Material Assets in the vicinity of the Site comprise of built services and infrastructure, such as:

- Electricity network utilities - The development utilises electricity supplies to the development via the onsite connection to the grid;
- Gas infrastructure (not in the area);
- Telecommunications - Telecommunications network is used at the site office;
- Local water supplies and foul water network - The abstraction well which is adjacent to the wheelwash is proposed to be decommissioned. As the wheelwash is proposed to move location, an abstraction well located on the neighbouring lands owned by Stresslite Precast Ltd. will be used to provide minimal quantities of water to the wheelwash. Abstracted groundwater will be recycled within the wash as far as practicable and topped up from the abstraction well when required. Residential properties local to the development, utilise both private and public water supplies. These residential dwellings use domestic septic tanks systems for wastewater;
- Surface water drainage infrastructure - Surface water at the development infiltrates through the underlying soils. There are no existing public surface water networks within the site boundary;
- Waste management infrastructure - Waste from the development is managed by suitable qualified and permitted and licenced contractors; and
- Geological resource - The development will result in a permanent loss of the geological resource within the site boundary; and
- Land Resource and Local Agriculture – A lateral extension of the existing quarry void is proposed by ca. 1.89 ha in the proposed northeastern extraction area. These lands are not currently in agricultural use.

Potential Effects and Mitigation

All effects relating to material assets are considered to be not significant with current practices continuing.

14 MAJOR ACCIDENTS AND DISASTERS

Section Purpose

Section 14 of the EIAR provides an assessment of potential effects of the continued operation and expansion of the Proposed Development on Major Accidents and Disasters. This assessment included consideration of both potential effects from the site and cumulative effects of other extractive or sizable industries in the surrounds of the site.

The consideration of major accidents and disasters seeks to assess the relevant accidents and disasters which a development is vulnerable to, and the relevant accidents and disasters that a development could give rise to. These unforeseen and unplanned events are to be assessed on the risk of their occurrence.

Setting and Existing Conditions

Due to Ireland's geographic location, it is less vulnerable to natural disasters such as earthquakes and tsunamis than other regions across the globe.

With regards to natural disasters, severe weather events such as flooding pose the greatest threat to Ireland.

The occurrence of a major geotechnical hazard, fire, explosion or fuel spillage resulting from operations at the quarry development, relating to the control of major-accident hazards involving dangerous substances, has the potential to give rise to a major accident or disaster, immediate or delayed.

Potential Effects and Mitigation

Potential risks of major accidents and / or disasters which are inherent to quarrying operations include:

- Geotechnical hazard i.e. collapse of a quarry wall;
- Accident during blasting;
- Fire during operation;
- Accident involving physical hazards such as heavy plant or falls from height;
- Spillage of chemicals or fuels to the ground;
- External major accident affecting the quarry; and
- Flooding.

The main receptors that could be affected by major accidents or disasters due to activities at the Site were identified and potential effects were assessed.

In accordance with Section 55 of the Safety, Health and Welfare at Work (Quarries) Regulations 2008 (S.I. No 28 of 2008) (SHW Quarries Regulations), a geotechnical assessment of the Site should be undertaken by a geotechnical specialist to identify and assess all factors liable to affect the stability and safety of the proposed and existing excavation and provide conclusion as to whether there is a significant hazard by way of instability or movement. This assessment is required to be undertaken on the Site on a regular basis.



The assessment concludes that with the maintenance of practices identified within Chapter 14 and the undertaking of mitigation, it is considered that the Proposed Development activities will not result in accidents or disasters that are deemed to be 'Major' and are not significant.

15 INTERACTIONS AND INTERRELATIONSHIPS

Section Purpose

This assessment summarises the primary interactions and inter-relationships and provides a matrix to coherently display the interactions of these disciplines. The overall objective of this assessment is to identify whether additional remedial mitigation is required that would not otherwise have been identified in the individual study areas for these interacting or cumulative effects.

Interactions of EIA study topic areas are typically displayed visually in a matrix table which identifies potential interactions which are likely to occur between the various disciplines. This table, from Chapter 15 of the EIAR, has been reproduced in Table 15-1. A '✓' in a box identifies the potential interacting disciplines where a relationship exists.

Table 15-1 - SQL Section 37L Environmental Interactions, (X = No Interaction; ✓ = Potential Interaction).

Cumulative and In combination effects with third-party developments were assessed and no significant effects were identified.

Table 15-1 – SQL Section 37L Environmental Interactions, (X = No Interaction; ✓ = Potential Interaction).

Interaction	Population & Human Health	Ecology and Biodiversity	Land, Soils & Geology	Water	Air Quality	Climate	Noise and Vibration	Cultural Heritage	Landscape & Visual	Traffic & Transport	Material Assets	Major Accidents & Disasters
Population & Human Health		X	X	✓	✓	X	✓	X	✓	✓	✓	✓
Ecology and Biodiversity.			✓	✓	✓	X	✓	X	✓	X	X	X
Land, Soils & Geology				✓	X	X	X	✓	✓	X	X	X
Water					X	X	X	X	X	X	X	X
Air Quality						X	X	✓	X	X	X	X
Climate							X	X	X	X	X	X
Noise and Vibration								X	X	X	X	X
Cultural Heritage									✓	X	X	X
Landscape & Visual										X	X	X
Traffic & Transport											X	X
Material Assets												X
Major Accidents & Disasters												

16 SCHEDULE OF MITIGATION AND MONITORING

The purpose of this chapter is to collate the mitigation and monitoring measures identified in the EIAR that are considered necessary to protect the environment during operational and restoration phases of the proposed development.

Where appropriate, environmental monitoring activities have been proposed for the operational and restoration phases. Monitoring is ongoing and will take place after the consent is granted for the proposed development to provide assurance that aspects of the design and management are functioning as intended and therefore not generating significant effects.



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