2.0 PROJECT DESCRIPTION

This Environmental Impact Assessment Report [EIAR] has been prepared to accompany an application for permission for further development of a quarry as a quarry at Windmillhill, Rathcoole, Co. Dublin.

This EIAR has been prepared in tandem with an rEIAR to accompany an application for substitute consent for that existing quarry under Section 261A of the Planning and Development Act, 2000 as amended by the same applicant.

The further development of the quarry is proposed over an area nearly entirely consisting of lands already excavated and is therefore mainly for the purpose of recovering the economic reserve that remains in the void. The proposed development site (application site) lies at the centre of a contiguous, established landholding of approximately 73 ha. That landholding is centered on the townland of Windmillhill and covers much of that townland area with protruding minor portions of that ownership unit extending north westerly into the townland of Steelstown and south easterly into the townland of Carrigeen.

The centre of the landholding has been the subject of historic, current and intended future extraction and is roughly rectangular in shape with a south to north orientation onto the N/M7. The southern boundary is delineated by the local Windmillhill Road and the western and eastern boundaries of this area are delineated by the Windmillhill townland boundaries. This area extends to 46.14 ha. and constitutes the EIA project boundary for the quarry.

The lands the subject of this EIAR [the subject lands] at 46.14 ha. entirely encompass the application lands of 26.87 ha. The reserve at this quarry is greywacke rock, overlain by boulder clay, currently worked to an average depth of 173 mAOD. The reserve is excavated by blasting and mechanical means, primarily processed by mobile plant at the working face. Excavated material is transported to a centrally located existing administration and processing plant area over approximately 5 ha. that holds further processing plant (washing, screening, grading, bagging), an asphalt production plant and concrete plant. This plant and processing area is an established part of the quarry area and has also been formerly used for the recovery of inert C&D waste.

This Chapter of the EIAR provides a description of the proposed development (the operational plan) and its physical context. Where appropriate, the Site's development policy context that is detailed at Chapter 3 is also here referenced for the purposes of description. It also includes information to support the need for the development within the construction market.

A detailed description of the project is presented in the following sections and provides a general description of the Site in its current form and a description of the proposed development, including an extension of the existing quarry void in the west (Western Quarry Area) and east (Eastern Quarry Area), and the continuation of extraction of rock (greywacke) for use as aggregate in the construction industry.

2.1 Location of Subject Lands

The EIAR project unit occupies the majority of the townland area of Windmillhill, Rathcoole, Co. Dublin centered at ITM coordinates 699794, 725614, 53°16'23.3"N 6°30'08.0"W.

Located on the southern side (outbound lane) of the N/M7, between Junctions 4 (east) and 5 (west) in County Dublin, just inside the county boundary approx. 2km from the County Kildare border to the west.

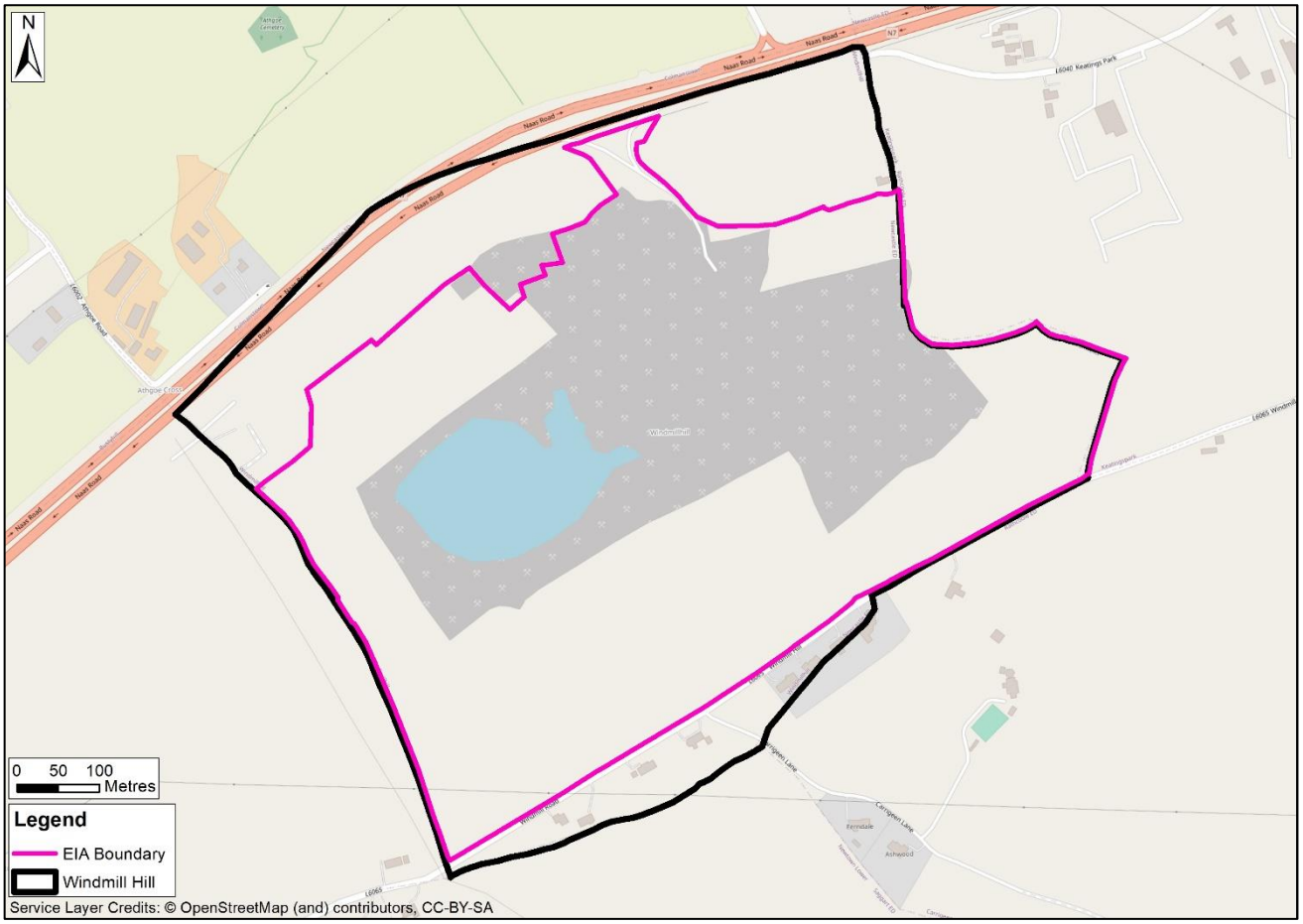

Figure 2.1: Subject Site and EIA and Windmillhill Townland boundary.

2.2 Context and Landscape Character of Subject Lands

The lands the subject of this EIAR are roughly rectangular in shape with a south to north orientation toward the N/M7. The lands are also bound by a local public road (Windmillhill Road L6065) to their south along which there are one-off house and agricultural pasture lands.

The western and eastern boundaries of the subject lands are formed by field boundaries and the eastern and western boundary of Windmillhill townland. The boundary to the west used to hold the local Athgoe Road (Tierney's Lane), no longer in use since the upgrade of the N7 in 2006. The eastern boundary is formed to its north by the avenue to a private dwelling in the ownership of the developer called 'Four Winds' and mature field boundaries thereafter. Further east (about 1 km) is Rathcoole currently designated as a Small Town in the South Dublin Development Plan 2016-2020. Between the subject lands and Rathcoole lie low density commercial uses; plant rentals and coach depot. Similarly, to the immediate north west of the subject lands are two service garages that access the northern portion of the ex. local Athgoe Road. In addition, to 'Four Winds', the subject lands holds another dwelling house, also in the ownership of the developer which is the farmhouse associated with the management of the agricultural land bank owned by the developer that encloses the EIA project boundary.

In this way, the immediate character of the lands is peri-urban with low density, one off roadside housing and low density commercial development, most established and formerly directly associated with the N7. Moving more west and south of the lands, the landscape becomes predominantly rural.

The subject lands have been used for quarrying since 1710 and obtained planning permission for stone quarrying in 1968. As such, the quarry and associated uses are an established feature of the landscape and the main feature of the EIA project lands.

The already extracted area extends to 28.8 ha. and occupies the centre of the EIA project unit. The quarry has a roughly oblong shape with a west – east axis of approximately 800 meters in length as opposed to the north – south axis that is an average of 340 meters in width. That quarry and associated plant and processing area is the subject of a concurrent application for substitute consent with rEIAR. It is proposed to further developer this quarry by deepening the eastern and western sides of the current void and laterally extending that void to the north over a total application site area of 26.87 ha.

The quarry Site is accessed from a left in / left out entrance via demarcated skip lanes off the N7. A short avenue leads to an administration and processing area that occupies an area of approximately 5 ha. that was evidently previously quarried. This plant area is established. As a result, extraction in recent decades has been to the west and south west and east and south east of this administration and processing plant area where extraction depth is now at an average of 173 mAOD.

A review of historic aerial photography and mapping indicates that the lands the subject of this EIAR have a south to north incline. This incline is removed from the extant quarry area but remains on surrounding agricultural land part of the developer's ownership. It is noted that the highest point of the lands at the ruined Wind Mill located in the centre of the southern quadrant of the EIA project boundary. The Cultural Heritage Chapter of this EIAR provides more detail on the Wind Mill, its status and the derived townland name, similarly landscape character assessment is provided at Chapter 10 of this EIAR.

It is noted that the subject Site is proximate to pieces of strategic infrastructure:

Roads: The N7 national primary road lies immediately north of the lands and the Site is accessed from this road which was first upgraded in the 1960s commensurate with the first planning permission for quarrying stone on the lands. The N/M7 to the north of the Site is strategic infrastructure that, elsewhere along its length, is amongst the National Development Plan 2018 – 2027 investment priorities and South Dublin / Kildare County Plans refer to intention to protect this road along its current alignment.

Local roads existed to the west and south of the quarry area denoting the southern margin of the landholding (respectively referred to as the Athgoe and Windmillhill Roads in South Dublin Development Plan 2016 – 2022 maps). The Windmill Road is a public road, and the Athgoe Road (Tierney' Lane) closed for through traffic since the last upgrade of the N7 in 2006.

The South Dublin Development Plan 2016 – 2022 indicates a roads objective for bypass in Development Plan to the west of Rathcoole within 1km of the Site to the east, not within subject Site landholding.

Electricity: There is a 110kV line traversing south western corner of the quarry area of the landholding.

Water: The Poulaphuca to Saggart water main runs parallel to the N7, part within the landholding. This is a major arterial watermain and therefore a strategic piece of established infrastructure indicated by wayleave on land folios.

Gas: There is a medium-pressure distribution pipe (180 PE-80 4 bar) located just outside northern section of the Site, between the boundary of the study area and the N7. The nearest extremity of the quarry to a transmission pipeline is some 1,800 m.

The transport context of the Site is set out in the traffic section of this EIAR at Chapter 11. The landscape context of the subject site is set out in the Landscape and Visual Impact Assessment at Chapter 10 of this EIAR.

2.3 Proposed Development Site already part of an operational quarry

As noted the proposed development is the further development of a quarry as a quarry. The existing quarry and associated plant and processing area is the subject of a concurrent application for substitute consent and rEIAR.

Extraction on the EIA lands evidenced in previously submitted registration and application material to have begun in the 1710 with planning permission originally secured for stone quarrying in 1968 (Reg. Ref. A.14/1157).

Table 2.1 has been prepared to provide a rendition of the development of the quarry to the current time using publicly available resources; historic mapping and photography; permitting and licensing histories; and historic monitoring records. Environmental monitoring records made available by the developer have been utilised alongside site visits and monitoring undertaken specifically for the preparation of this EIAR and concurrent rEIAR. In addition, the developer and companies running the quarry Site provided historical excitation rates and direction information.

2.4 Description of Subject Lands

Table 2.1 sets down a timeline in order to present the progression of the subject site in a coherent order. Here we have identified the start of operations as 1710, 1968 and then from 1990 through to 2021.

The principal events identified at Table 2.1 to have taken place on the subject site are joined by the principal projects in the vicinity of the site in order to allow for a description of the development of the Site context.

Having regard to the EIAR requirement to assesses in-combination and cumulative effects we have similarly tracked significant projects in the area and their permitting timelines and, where possible, reviewed the information submitted with those applications, their considerations and decisions to further aid in building a profile of the development subject site over its lifetime.

Table 2.1: Summary of key events on subject site and surrounding lands.

Time		Events	
Year	**Reference / Source**	**Site Event**	**Principal Projects / Extra Site Events**
1710	25 April 2005, S.261 Registration Form & High Court Order [2018 No. 929 JR].	[1] Extraction declared and accepted to be began circa. 1710	
1937			
to 1945	1945	Watermain laid	Poulaphouca reservoir constructed and original watermain laid.
Oct 1964			*Local Government (Planning and Development) Act, 1963 commencement*
June 1968	Reg. Ref. 1547 A.14	Planning permission granted for 'stone quarrying'	
1972			Dublin County Development Plan 1972
	Reg. Ref. SA1936	Planning application submitted for '*machinery store'* (granted)	
1976			Planning act that required Development Plans for periods of 5 years and formed An Bord Pleanála.
Feb. 1980	Reg. Ref. SA1936	Planning permission granted for '*machinery store'* (Reg. Ref. SA1936)	
1983			Dublin County Development Plan 1983
Dec. 1988	Reg. Ref. 88A/709	Planning permission granted for '*mobile asphalt mixing plant in existing quarry'* (Reg. Ref. 88A/709)	
1991			Dublin County Draft Development Plan
1993			Dublin County Development Plan 1993
1994			Dublin County Council abolished and South Dublin County Council formed.
1998			South Dublin County Development Plan 1998 - 2004
1998			N7 Jct 1A-4 Newlands Cross-Rathcoole upgrade complete

Time		Events	
Aug 2002			ABP PL09 .ER2008 N7 ABP PL09 .ER2008 N7 Rathcoole to Kildare County Boundary Road Improvement Scheme (CPO confirmation & proposed rd. dev. S.51) (concurrent CPO ref. PL09 .CH2025)
July 2003			ABP PL06S.ER2018 N7 Rathcoole to Kildare County Boundary Road Improvement Scheme (CPO confirmation & proposed rd. dev. S.51) Confirmed (concurrent CPO ref. PL09 .CH2077)
Apr 2005	SDCC Waste Permit ref. WPR051	Waste permit for 'Deposit of waste bituminous product into haul Roads throughout the quarry of L. Behan & Sons, Windmill Hill.' Begins for up to 5,000 tonnes p.a. for 'Recycling or reclamation of other inorganic materials.'	
2004			Adoption of South Dublin County Development Plan for the period 2004 - 2010
Apr. 2005	South Dublin County Council (SDCC) S.261 Registration ref. SQU05A/4	Quarry registered as existing and Pre '63	
Oct. 2005	S.261 Registration SDCC ref. SQU05A/4	Response to further information request under S.261 received - revised map indicating (a) site boundary in red, (b) extractable area in blue, (c) 'total extracted area in green'.	
Oct. 2005	S.261 Registration SDCC ref. SQU05A/4	Letter from agent stating that they had found 'full planning permission for the operation of the he quarry' ref. 'A.14.11547 and is dated 20th May 1968'. Copy enclosed.	
Feb. 2006	S.261 Registration SDCC ref. SQU05A/4	This letter requires the site to be re-registered and a new public notice will be required as status found to be permitted and will be considered on that basis)	
Oct 2006	S.261 Registration SDCC ref. SQU05A/4	Resubmission of S.261 registration form by agent	
Feb. 2007	S.261 Registration SDCC ref. SQU05A/4	Revised planning conditions notified on operation (ref. SDQ05A/4) this followed preparation of planner's report on registration readvertisement in Jan 2007	
Apr 2007	S.261 Registration SDCC ref. SQU05A/4	36 no. conditions applied under S.261. Cond. No. 1 refers to original info. And further information maps. No. 35 limits extraction to within blue line on revised site location sheet no. 1 dated 23/04/05 '*submitted as Additional Information on 10 October 2005.'*	

Time		Events	
Sept 2007	An Bord Pleanála (ABP) ref. PL06S.PC0036	Application to determine if N7 Resource Recovery Project (N7RRP) Strategic Infrastructure Development (SID) (ref. PL06S.PC0036 (SID) for Energy Answers International Ltd.	
Dec. 2007	An Bord Pleanála (ABP) ref. PL06S.PC0036	N7 Resource Recovery Project (N7RRP) determined to be SID ((ref. PL06S.PC0036 (SID) for Energy Answers International Ltd.	
Apr 2008	SDCC Waste Permit ref. WPR051	Waste permit for 'Deposit of waste bituminous product into haul Roads throughout the quarry of L. Behan & Sons, Windmill Hill.' Ends	
May	SDCC Waste Permit	Application made (annotating anticipated start July 2008)	
May 2008	ABP ref. ref. PL06.PA0006	SID planning application submitted for N7 Resource Recovery Project (N7RRP)	
Feb. 2009	ABP ref. ref. PL06.PA0006	Planning consent refused to Energy Answers International Ltd. for SID N7 Resource Recovery Project (N7RRP) (ref.PL06.PA0006)	
Feb 2010			Refuse to approve Kildare County Council Motorway (M7 Osberstown Interchange) Scheme Order 2008 ref. PL09 .MA0005
Oct. 2008	SDCC Reg. Ref. SD08A/0707	Planning application for 1.5 storey office invalid (Reg. Ref. SD08A/0707)	
Nov. 2008	SDCC Reg. Ref. SD08A/0764	Planning application for 1.5 storey office withdrawn (Reg. Ref. SD08A/0764)	
May 2010	SDCC Reg. Ref. SD10A/0139	Planning application invalid to increase to 50,000 tonnes per annum the existing waste management facility (WPR 051/3) to accept tar macadam, waste concrete & waste aggregates for its recycling & reuse in the tar macadam manufacturing plant located on the site. (Reg. Ref. SD10A/0139)	
June 2010	SDCC Reg. Ref. SD10A/0175	Planning application invalid to increase to 24,000 tonnes per annum the existing waste management facility (WPR 051/2) to accept tar macadam, waste concrete & waste aggregates for its recycling & reuse in the tar macadam manufacturing plant located on the site. (Reg. Ref. SD10A/0175)	
July 2010	SDCC Reg. Ref. SD10A/0197	Planning application made for waste management facility 24,000 tonnes intake per year (reuse and recycling in asphalt plant and deposition on site in haul roads	
Oct 2010			South Dublin County Development Plan for the period 2010-2016 came into effect

Time		Events	
Mar. 2011	SDCC Reg. Ref. SD10A/0197	Planning application declared withdrawn for a Waste Management Facility with a maximum intake volume of 24,000 tonnes per annum to accept inert waste material including waste bituminous mixtures (EWC 170302), waste concrete (EWC 170101) & waste gravel and crushed rocks (EWC010408) for recycling & reuse in the existing tarmacadam manufacturing plant located on the site and to facilitate the deposit of waste bituminous product, waste gravel and waste concrete into haul roads throughout the subject quarry site in which the subject waste facility is located. The site currently has a Waste Permit (Waste Permit No. WPR 051/2) with a permitted volume of 500 tonnes per annum. This development requires a Waste Facility Permit under the Waste Management (Facility Permit and Registration) Regulations 2007 and 2008. (Reg. Ref. SD10A/0197)	
Nov 2011	SDCC Reg. Ref. SD11A/0271	Planning application made for waste management facility 10,000 tonnes intake per year (reuse and recycling in asphalt plant)	
Jan. 2012	SDCC Reg. Ref. SD11A/0271	Planning permission refused for 'a waste management facility with a maximum intake volume of 10,000 tonnes per annum to accept inert waste material including waste bituminous mixtures (EWC 170302), waste concrete (EWC 170101) & waste gravel and crushed rocks (EWC 010408) for it's recycling & reuse in the existing tarmacadam manufacturing plant located on the site. The site currently has a waste permit (Waste Permit No. WPR 051/2) with a permitted volume of 500 tonnes per annum. This facility requires a Certificate of Registration under the Waste Management (Facility Permit and Registration) Regulations 2007 and 2008.' (Reg. Ref. SD11A/0271)	
Mar 2012	SDCC Reg. Ref. SD12A/0059 (appeal ref. PL06S.241259)	Planning application made for importation of 10,000 tonnes per year (reuse and recycling in asphalt plant)	
Aug 2012	S.261A Quarries Notice ABP ref. PL06S.QB0360	S.261A Quarries Notice issued to ABP by SDCC	
Aug 2012	S.261A Quarries Notice ABP ref. PL06S.QV0090	S.261A Quarries Notice application for review on behalf of operator	
Oct. 2012	S.261A Quarries Notice ABP	S.261A Quarries Notice recorded as received ref. SDQ05A/04 (ref. PL06S.QB0360)	

Time		Events	
	ref. PL06S.QB0360		
Oct / Nov 2012	SDCC Reg. Ref. SD12A/0059 (appeal ref. PL06S.241259)	Notification of grant of planning permission for importation of 10,000 tonnes per year (reuse and recycling in asphalt plant), 3rd party appeal lodged	
Oct 2012	SDCC Certificate of registration (COR) COR-DS-12-0002-01	Application made for annual intake of inert (soil and stones) of less than 10,00 tonnes p.a.	
May 2013	S.261A Quarries Notice ABP ref. PL06S.QV0090	S.261A Quarries review ref. SDQ05A/04 resulting in modification:- requirement for substitute consent with rEIS(ref. PL06S.QV0090)	
May 2013	SDCC Reg. Ref. SD12A/0059 (appeal ref. PL06S.241259)	Planning permission upheld on appeal for 'a dedicated area within the existing quarry site in which no more than 10,000 tonnes per year of imported inert materials (soils, stones, rock, concrete, tarmacadam) generated by off-site construction activities shall be segregated, processed, recycled and reused as raw materials for the existing on-site asphalt manufacturing plant. The proposed development requires a Certificate of Registration under the Waste Management (Facility Permit and Registration) Regulations 2007 and 2008'. (Reg. Ref. SD12A/0059 and appeal ref. PL06S.241259)	
Aug 2014			Kildare County Council (M7 Naas Newbridge Bypass Upgrade) Motorway Scheme Order 2013 approved with modifications (ref. PL09.MA0012 (CPO ref. HA0045)) & Kildare County Council M7 Osberstown Interchange Motorway Scheme Order 2013 (ref. PL09MA.0013 (CPO refs. HA0046 & KA0031))
Jun 2016			South Dublin County Development Plan for the period 2016-2022 came into effect
Apr / May 2018	SDCC Reg. Ref. SD12A/0059/EP	Extension of duration of Reg. Ref. SD12A/0059 application made and refused (Reg. Ref. SD12A/0059/EP)	
Oct 2013	S.261A substitute consent application ABP ref. PL06S.SU0068	Substitute consent application made for	
Nov 2015	S.37L further development of a quarry application ABP ref. PL06S.QD0003	S.37L application made for '*Continued development of a quarry, 40.875 Ha. Reinstatement of worked out quarry to agricultural use by importation of inert sub soil and top soil amounting to a total of 11,151,570 cubic metres.'*	

Time		Events	
Sept 2018	S.261A substitute consent ABP ref. PL06S.SU0068	Substitute consent refused	
Sept 2018	S.37L further development of a quarry ABP ref. PL06S.QD0003	S.37L further quarry development refused	
Aug 2020	High Court Order No.	Substitute consent application ABP ref. PL06S.SU0068 and S.37L further quarry development PL06S.QD0003 decision quashed and new applications ordered.	
Sept 2020			Pre-Draft consultation phase for South Dublin Development Plan 20022 – 2028 ends.

NOTES: Reg. Ref. = Planning Application Register Reference Number under Planning & Development Acts
SDCC = South Dublin County Council
ABP= An Bord Pleanála

2.4.1 Summary of Progression of Extraction from Baseline to Current Time

The single most significant impact of the Development the subject of this EIAR is that it consists of a quarry and therefore there has been movement of soils and subsoils and extraction of aggregate beneath over the void area.

The developer supplied information that provides extraction direction of lands beginning in an area of approximately 8 ha. centred on the established administration and processing plant area (approximately 1962 to 2012). Extraction then moved westward over and area of about 10 ha. and continues to be extracted today (approximately 1990 – today) and continued eastward in tandem over another area of nearly 12 ha. that also continues to be extracted today. Together, these extraction areas give rise to the concurrent substitute consent application area of 28.8 ha.

Estimated historic extraction rates from 1990 to 2021 average around 500,00 tonnes per year, save for peak demand over 2007 to 2009 mainly reflecting supply to the Monasterevin bypass and recession from 2010 to 2013 where extraction rates dropped to and estimated 50,000 tonnes per year and the quarrying activity on site was augmented by the importation and recovery of C&D waste.

2.4.2 Future Extraction

A reserve of an estimated 5 million tonnes of greywacke rock lies beneath the extant void, currently at an average working depth of 173 mAOD. It is proposed to laterally extend and deepen the extension areas to the current quarry depth of 150 mAOD, above the watertable.

The Applicant intends to maintain the aggregate extraction and throughput rate of the site and therefore an average extraction rate of 500,000 tonnes per annum is proposed over a lifetime of 10 to 15 years to account for any potential demand reductions.

The proposed development of further extraction is to be in the existing void areas east and west of the central administration and processing plant area with relatively minor lateral extension of the void to the north. The rates of extraction predicted as part of that application, which will be accompanied by EIAR that has regard to the historic rates here set out.

A restoration proposal is included in this EIAR that is entirely within the EIA unit and the Applicant land ownership that is intended to be implemented once extraction proposed is complete. This restoration summarily consists of the regrading of void faces to safe inclines with the bottom of the void flooded. Native species planting is proposed in accordance with advices from the ecologist team for this EIAR. The restoration proposal is detailed in Chapter 11 of this EIAR. It is anticipated that restoration will require 24 months for plant and building removal, regarding and plating works and first planting season inspection. This two year requirement is proposed to be over a period of 2 to 5 years to reflect the potential for slippage in that programme by reason of demolition and removal issues or plant failure.

2.5 Description of the Project

The quarry development EIAR area consists of the following:

- An EIA area of 46.14 ha;
- A further development of a quarry as a quarry over an area of 26.87 ha. consisting of further extraction within that EIA unit;
- The material being extracted and proposed to be extracted is greywacke rock;

- Stripped overburden (soils and subsoils) estimated at a depth of ca. 1 m over an area of 5.16 ha. to expose a laterally extend the existing quarry void by 4.1 ha. to the west and east of the existing farmhouse (used as staff accommodation) on the northern margin of the Plant and processing area;
- Removed overburden (soils and subsoils) from the laterally extended void will be stored on the margins of this expanded area as screening berms;
- Aggregate excavated will utilise the existing plant and processing area the subject of concurrent substitute consent and rEIAR;
- The existing site entrance from the n/M7 is proposed to continue to be utilise for the prosed further development of the quarry;
- A restoration proposal is included in this EIAR that is entirely within the EIA unit and the Applicant land ownership that is intended to be implemented once extraction proposed is complete as final mitigation.

2.5.1 Method and Direction of Working

- The proposed development consists of the continuation of extraction that will maintain existing average extraction rates and practices.
- This is a greywacke (sandstone) rock quarry and therefore material is extracted by blasting which is proposed to continue;
- Blasting practices used over the assessment period accord with best industry practice and are carried out by independent, licensed contractors. Blasting is monitor and reported for each blast, (Chapter 8 of the EIAR considers noise and vibration). Blasting currently takes place approximately weekly at the Site which is proposed to continue;
- This material is then crushed via mobile primary plant at the face and transported. The material processed via mobile plant is brought by internal haul route to the plant area for sale or onward processing in the plant area. This practice is proposed to continue and relies on the concurrent application for substitute consent being approved.
- The quarry was previously worked below watertable and therefore pumps water via pipeline from the void northwards across the plant area to discharge at a point close to north of the Site office. Chapter 6 of this EIAR sets out water management arrangements and effects.
- Current extraction activities take place above the watertable to an average working depth of 173 mAOD and are proposed to remain above the watertable at a proposed final average working depth of 150 mAOD, with the lowest point of the quarry remaining at ca. 120 mAOD (the base of the quarry sump).

2.5.2 Traffic Control

All traffic occurring within the Site is internal traffic using internal short informal haul routes. Excavated rock leaves the quarried faces and it either transported off-site or to the plant area for storage or further processing. The proposed extracted material will be transported in the same way.

The Site entrance to the lands from the N7 is the sole entrance for the Development thus caters for all employees, visitors and aggregate products and materials (import/export). Therefore it this interurban national route that accommodates the traffic arising from the current development that is proposed to be maintained at current average annual levels for the purposes of excavating remaining reserve at the site. No traffic arising from the quarry operation access the local network as there is no access to that quarry from that network.

The Traffic section of this EIAR sets down a description of the existing traffic environment of the site and the precited impact of the prosed continuation of the average annual traffic from the Site for 10 – 15 whereupon traffic generation for the quarry will cease with ad hoc traffic generation from restoration implementation.

2.5.3 Hours of Operation

There were no prescribed operational hours for quarry operation under the 1968 permission. Reflecting normal practice and declared on the S.261 registration form for the site ref. SQU05A/4 in both April 2005 and October 2006 were operational hours of 0500 to 1900 hours Monday to Friday and 0500 to 1400 hours Saturday with no Sunday working. Further information responses and resubmission of the S261 registration appear to include reference to out of hours working resulting in the final S.261 conditions for the site, from April 2007, imposing condition no. 3 that sets operational hours of 0500 to 2100 Monday to Friday and 0500 to 1400 on Saturdays.

Having regard to the above and observed operational practices on site, those operational hours imposed under S.261 registration are proposed to remain: 0500 to 1900 hours Monday to Friday and 0500 to 1400 hours Saturday. Operations do not occur working on Sundays or bank holidays. It is understood that working outside of these hours has been undertaken on ad hoc occasions for the fulfillment of certain significant infrastructure projects. It is further understood that such out of hours working is by arrangements with the authority.

These operational times of the Site to present day and are proposed to be maintained in the current development proposal.

2.5.4 Employment

Existing direct and indirect employment is attributable to the quarry. Employment levels vary in accordance with market demand and associated extraction and processing requirements. Direct employment is in the categories of plant operators, fitters, laboratory technicians, administrative staff.

Since 1990, full time employment on the site is an average of 12 no. employees with these hauliers and other contractors and service employees generate secondary employment of a further 30 no. fulltime equivalents

The quarry operator has a fleet of haulage vehicles and drivers but the majority of the haulage requirements of the site are met by independent contractors who do not have their permanent work place on site.

It is noted that at times when peak demand existed; the work including direct employees, sub-contractors, hauliers, maintenance contractors, material suppliers etc. has increased from time to time.

There is also indirect employment in the supply chain to provide material, specialist labour and services for the workforce. Based on the information available at present, it is not possible to quantify the extent of the indirect employment created, however, it is expected to have been in the order of 25 to 33% of direct employment, based on estimated additional jobs created in similar projects.

A total of 42 no. fulltime jobs (EFT) are proposed to remain as a result of the proposed development which will allow for further extraction of aggregate for 10 – 15 years. The indirect employment that the site supports at a rate of 15% to 30% of the EFT will also remain.

2.5.5 Fuel and Chemical Storage

Fuel storage is in bunded fuel tanks in the plant area, part of the concurrent substitute consent application and within the EIA boundary. Refuelling occurs at these tanks over a concrete apron with interceptor below. It Remaining oils, chemicals and admixtures are ordered and used as needed used oil and chemical containers are separately stored within the maintenance sheds for disposal by licensed contractor.

2.5.6 Waste Management

The waste arising on site is municipal waste from staff welfare activities and is disposed of via domestic waste collection. Similarly, scrap metal arising on site is stored within a designated area at the site prior to collection by a licensed waste contractor.

As noted above, part of the quarry site has been previously utilised for the purposes of the operation of intake and processing for reuse inert C&D waste under waste permits and a certificate of registration over the period 2005 to 2018. Currently there is no waste permit, certificate of registration or license associated with the site and one is proposed as part of the further quarry development.

2.5.7 Water

2.5.7.1 Waste Water

There exists a holding tank on site of sufficient capacity to cater for the PE equivalent of average 30 persons on site arising from: full time site employees, contractors and additional visitors. The location of this tank is within he plant and processing area and is included in the concurrent application for substitute consent. Chapter 6 of this EIAR describes this system.

2.5.7.2 Potable Water

There is a well in the plant area for which toilet flushing and WC washing water is drawn. Also indicated on submitted site layout drawings is a separate well from which water for the purposes of aggregate processing is drawn. Drinking water is supplied by contractor in bottles that are periodically replaced.

Obtaining water from wells within the site boundaries and importing potable bottled water is the established practice on site and is intended to continue subject to substitute consent.

2.5.7.3 Surface and Groundwater

There is currently no below groundwater table working nor any below. Chapter 6 of this EIAR performs a water balance for proposed quarrying and extant quarry and plant and processing areas in order to demonstrate the ability of the existing water management system of silt press, water recycling unit and settlement ponds within the substitute consent area to manage within site boundaries the surface water arising within the operational areas of the EIA project area.

This EIAR accompanies a proposal for the deepening of the average working depth of the quarry from ca. 173 mAOD to ca. 150 mAOD that has been assessed to be above the watertable. The eventual restoration of the site will result in the bottom of the void areas becoming flooded. This will be achieved by water ingress via the extant quarry sump, which has a floor elevation of ca. 120 mAOD. Changes in groundwater levels within the quarry from the proposed pumping have been assessed in Chapter 6 (Water), these effect have been determined to be not significant.

2.5.8 Power Supply & Telecommunications

Power is supplied to the subject lands via the electricity network. The south western corner of the EIA project area and substitute consent application area are traversed by 110kV a public power line. There is a substation on site indicated on site layouts submitted with substitute consent application that has been in existence on site since before 1990. There are also mobile generators utilised on site from time to time.

2.5.9 Safety and Security

The subject site is required to meet conditions of existing planning permissions, licences and permits and certain statues. In particular, the relevant Health & Safety legislation (*Safety, Health & Welfare at Work Act, 2005*, the *Mines and Quarries Act, 1965)* and subsequent Quarries Regulations relating to health and safety, training, appropriate site management etc. will be complied with in that main quarry complex. Amongst these regulatory

requirements are the need to keep on site and up to date Health and Safety File which records safe procedures, deviations from those procedures and accident reports.

Compliance with these requirements will persist during the proposed further development of the quarry. The operator maintains a Health and Safety File and facilitates site inspections by the health and Safety Authority (HSA) and audits for geotechnical stability and site arrangements.

The EIA unit is fully fenced with any agricultural entrance permanently closed and locked. The only vehicular entrance in operation is that from the N7 which is gated inside the edge of the carriageway to allow for safe onward travel of vehicles that may mistakenly exit the N7 on the slip road to the site. All vehicles entering the site must do so from the N7 entrance and travel along the dedicated private avenue which is observed by the shipping office into the operational areas of the site. As noted at 2.5.2 this traffic management arrangement is to persist for the proposed further development of the quarry

The lands are remotely secured via CCTV cameras with 24 hour monitoring which is to remain on site. There is no requirement for lighting outside of the subject lands but within the lands, certain working hours (after dark in winter periods) necessitate lighting that is extinguished when the site is closed thus no external light spill occurs. This situation is to remain in the proposed development which does not require additional lighting.

2.5.10 Rehabilitation / Restoration

Extraction has occurred on the subject lands since 1710 and the originating planning permission is from 1968 when proposals for post-quarrying reuse (rehabilitation, restoration) were not envisaged nor required. Condition nos. 26, 27 and 28 of the April 2007 conditions imposed after S.261 registration required inter alia; the submission of 'phased carrying out of rehabilitation and landscaping operations within a definite period or periods related to the anticipated pace of extraction operations' (cond. no. 26); landscaping and boundary treatment proposals (cond. no. 27); and the removal of all plant and buildings within 12 months of the cessation of quarrying on site with implementation of landscaping proposals at that time (cond no. 28).

Compliance submissions in relation to the above conditions were made on behalf of the operator in May 2008. Exchanges on the material suited continued until May 2013 when the local authority had begun S.261A review of quarries within their administrative area and communicated that further compliance submissions would be inappropriate given that review. In summary, it is submitted that the then proposed phasing indicated the further lateral extraction over the areas from the central plant area south west and south east to the S.261 extraction boundary to a final average depth of 135 mAOD with a 'low point' of 120 mAOD.

It is further submitted that restoration was then submitted to be carried out at the end of the extraction life of the site. This is submitted to remain the practical rehabilitation model in this instance as the extant void is an open pit that holds commercial reserve and that cannot be worked on phased basis.

As recorded at 2.4.2 above, a restoration proposal is included in this EIAR that is entirely within the EIA unit and the Applicant land ownership that is intended to be implemented once extraction proposed is complete.

This restoration summarily consists of the regrading of void faces to safe inclines with the bottom of the void flooded. Native species planting is proposed in accordance with advices from the ecologist team for this EIAR. The restoration proposal is detailed in Chapter 11 of this EIAR. It is anticipated that restoration will require 24 months for plant and building removal, regarding and plating works and first planting season inspection. This two year requirement is proposed to be over a period of 2 to 5 years to reflect the potential for slippage in that programme by reason of demolition and removal issues or plant failure.

2.6 Major Accidents and Disasters

The EIA Directive (Directive 2011/92/EU, as amended by Directive 2014/52/EU) requires that an assessment is made of *'the expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters that are relevant to the project concerned'*.

The consideration of major accidents and disasters seeks to assess the relevant accidents and disasters which the Proposed Development is vulnerable to, and the relevant accidents and disasters that the Proposed Development could give rise to.

The objective of this assessment is to confirm that suitable precautions are taken into account for the Proposed Development and that the potential for significant adverse effects on the environment is reduced as far as possible.

A primer document on the assessment of major accidents and disasters in the context of EIA was published by the Institute of Environmental Management and Assessment (IEMA) in September 2020 ('Major Accidents and Disasters in EIA: A Primer'). The document offers an assessment methodology based on known current practice to date and identifies key terminology that can be used in the assessment. As this is an emerging topic, the IEMA document is intended as a primer to introduce the concept of the topic and offer an initial appreciation of methodology that could be adopted.

The document provides the below terminology to describe 'major accidents' and 'disasters'.

- **Major Accidents**: Events that threaten immediate or delayed serious environmental effects to human health, welfare and/or the environment and require the use of resources beyond those of the client or its appointed representatives to manage. Whilst malicious intent is not accidental, the outcome (e.g. train derailment) may be the same and therefore many mitigation measures will apply to both deliberate and accidental events; and
- **Disaster**: May be a natural hazard (e.g. earthquake) or a man-made/external hazard (e.g. act of terrorism) with the potential to cause an event or situation that meets the definition of a major accident.

In terms of national guidance, in January 2010 the then Department of Environment, Heritage and Local Government (DEHLG) produced 'Guidance Document 1, A Guide to Risk Assessment in Major Emergency Management' (DEHLG 2010 Guidance). This guidance has been used to inform the assessment of Major Accidents and Disasters.

2.6.1 Scope of this Assessment

The assessment of major accidents and disasters is based on the premise that the Proposed Development has been designed and will be developed/extracted and operated in line with best current practice and national guidelines.

Site management practices and environmental mitigation relevant to the vulnerability of a development to major accidents and disasters are covered by a wide range of safety and non-safety-related legislation. In most scenarios such mitigation is generally sufficient to manage a development's vulnerability to major accidents and/or disasters without the need for further specific assessments or mitigation.

The environmental impact assessment process includes the appraisal of potential accident scenarios such as pollution incidents as well as the evaluation of potential flooding events. Such scenarios are assessed within this EIAR, including Chapters 5 Land, Soils and Geology and Chapter 6 Water.

2.6.2 Methodology

The DEHLG 2010 Guidance has been used to categorise the potential impacts from the potential major accidents and disasters identified above.

The assessment steps have included:

- Risk / hazard identification;
- Risk / hazard classification, and the likelihood and consequence; and
- Risk / Hazards Assessment and Evaluation.

2.6.3 Risk / Hazard Identification

The identification of risks and hazards has concentrated on the plausible incidents which could potentially occur at the Proposed Development and that are inherent to quarrying operations. These include;

- Fire / explosion;
- Unplanned outages or disruption to services;
- Road traffic accidents resulting from Heavy Goods Vehicle (HGV) movements, on and off site;
- Contamination of the groundwater/ surface water;
- Flooding; and
- Falling debris or the collapse of benches or quarry faces.

2.6.4 Risk / Hazard Likelihood and Consequences

Likelihood

The likelihood of occurrence of each of the risks / hazards identified above has been assessed in accordance with the criteria identified in Table 2.2. The assessment considered the Site's safety and management procedures and proposed environmental controls / mitigation when evaluating the appropriate classification. Therefore, the likelihood ranking allocated to each of the risks or hazards has made the assumption that all proposed mitigation measures and relevant procedures are in place, operational and have been/will be successful in reducing the potential for a major accident and / or disaster to occur.

Table 2.2: DEHLG, 'A Guide to Risk Assessment in Major Emergency Management' (2010), Risk Likelihood Classification.

Ranking	Likelihood	Description
1	Extremely Unlikely	May occur only in exceptional circumstances; once every 500 or more years
2	Very Unlikely	Is not expected to occur; and/or no recorded incidents or anecdotal evidence; and/or very few incidents in associated organisations, facilities or communities; and / or little opportunity, reason or means to occur; may occur once every 100-500 years.
3	Unlikely	May occur at some time; and /or few, infrequent, random recorded incidents or little anecdotal evidence; some incidents in associated or comparable organisations worldwide; some opportunity, reason or means to occur; may occur once per 10-100 years.
4	Likely	Likely to or may occur; regular recorded incidents and strong anecdotal evidence and will probably occur once per 1-10 years

Ranking	Likelihood	Description
5	Very Likely	Very likely to occur; high level of recorded incidents and/or strong anecdotal evidence. Will probably occur more than once a year.

Consequence

The DEHLG 2010 Guidance sets out criteria to classify emergencies on a five level scale from 'Minor' to 'Catastrophic' (Table 2.3). Those emergencies which have been classified as 'Serious', 'Very Serious' and 'Catastrophic' are deemed to be 'Major Emergencies'. The identification of the consequence makes the worst-case assumption that the Site's safety and management procedures and proposed environmental controls / mitigation have failed.

Table 2.3: DEHLG, 'A Guide to Risk Assessment in Major Emergency Management' (2010), Risk Classification Table.

Rank	Classification	Impact	Description
1	Minor	Life, Health, Welfare Environment Infrastructure Social	Small number of people affected; no fatalities and small number of minor injuries with first aid treatment. No contamination, localised effects <€0.5M. Minor localised disruption to community services or infrastructure (<6 hours).
2	Limited	Life, Health, Welfare Environment Infrastructure Social	Single fatality; limited number of people affected; a few serious injuries with hospitalisation and medical treatment required. Localised displacement of a small number of people for 6 - 24 hours. Personal support satisfied through local arrangements. Simple contamination, localised effects of short duration €0.5-3M Normal community functioning with some inconvenience.
3	Serious	Life, Health, Welfare Environment Infrastructure Social	Significant number of people in affected area impacted with multiple fatalities (<5), multiple serious or extensive injuries (20), significant hospitalisation. Large number of people displaced for 6-24 hours or possibly beyond; up to 500 evacuated. External resources required for personal support. Simple contamination, widespread effects or extended duration €3-10M. Community only partially functioning, some services available.
4	Very Serious	Life, Health, Welfare Environment Infrastructure Social	5 to 50 fatalities, up to 100 serious injuries, up to 2000 evacuated Heavy contamination, localised effects or extended duration

Rank	Classification	Impact	Description
			€10 - 25M Community functioning poorly, minimal services available
5	Catastrophic	Life, Health, Welfare Environment Infrastructure Social	Large numbers of people impacted with significant numbers of fatalities (>50), injuries in the hundreds, more than 2000 evacuated. Very heavy contamination, widespread effects of extended duration. >€25M Serious damage to infrastructure causing significant disruption to, or loss of, key services for prolonged period. Community unable to function without significant support.

2.6.5 Risk / Hazards Assessment and Evaluation

The identified risk / hazard 'likelihood' and 'consequence' are combined in a matrix to indicate the overall risk score for the particular major accident or disaster. This matrix, as per the DEHLG 2010 Guidance, has been provided in Figure 2.2, below. As identified in the matrix events which are classified as 'Serious' or above are identified to be major emergencies and are therefore significant in terms of their effects.

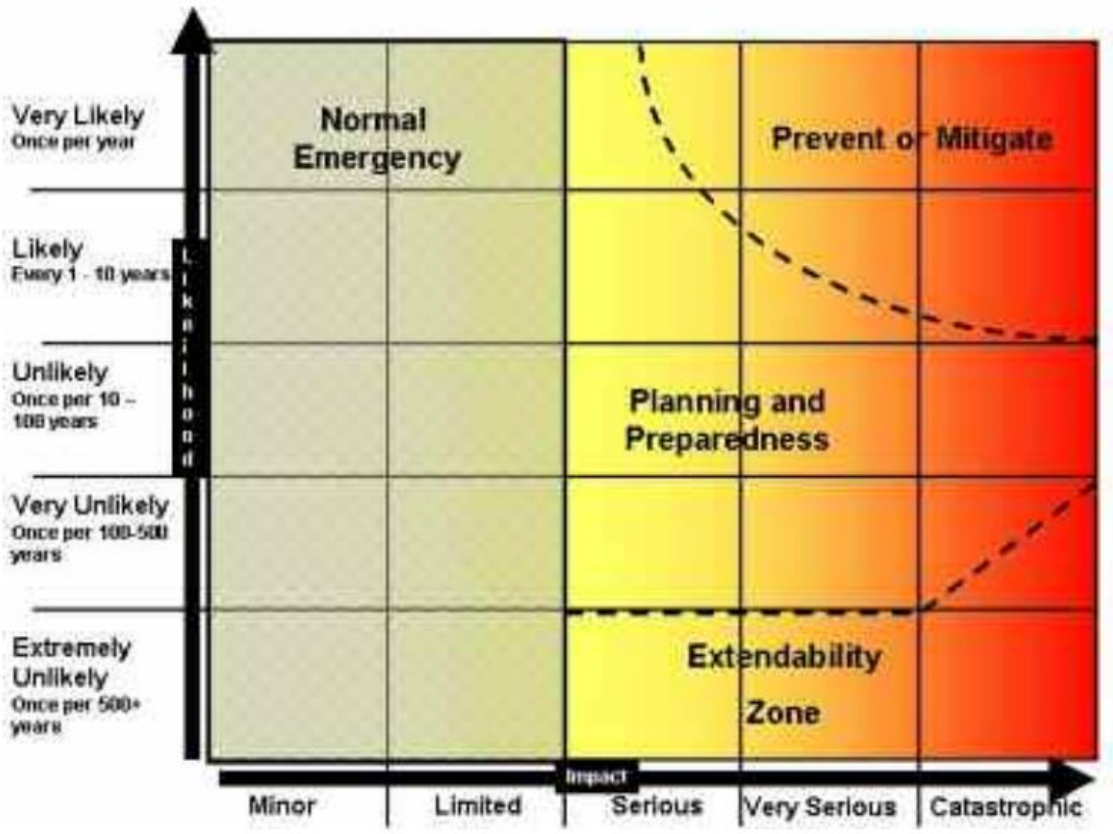

Figure 2.2: DEHLG, 'A Guide to Risk Assessment in Major Emergency Management' (2010), Risk Matrix Zones (Figure 2.1a).

The following sections identify the potential, relevant risks which could occur at the Proposed Development and that are inherent to quarrying operations. Based on the assumption that the Proposed Development has been designed and will be developed/extracted and operated in line with best current practice and national guidelines, a number of the potential risks identified have been disregarded from further assessment. Where appropriate the relevant risk likelihood, consequences and evaluations have been carried out to identify the appropriate further measures to be taken to address the specific major accident and / or disaster.

Fire / Explosion

During the operation and restoration of the Proposed Development there is potential for fire to occur from vehicle collisions on Site, and from plant such as the asphalt plant and aggregate screens. Plant activities and employee work practices are governed by the L Behan Aggregates and Recycling Safety Statement and Site-Specific Risk Assessments, (revision 08 January 2020). Furthermore, plant and equipment are regularly maintained on Site at the appropriate intervals. Vehicles are checked daily for obvious defects by the driver and are regularly serviced and maintained (in accordance with manufacturers' guidance) by a competent person. All maintenance and repairs are only completed by authorised persons. It is considered that with the implementation of the appropriate management measures for site safety, equipment use and maintenance, there will be adequate control of the risk of fire/explosion from vehicles or plant, therefore this has been disregarded from further assessment.

Given the lack of underground services within the Proposed Development area, damage to or contact with unmapped underground services and utilities, such as the electricity and gas supply networks is considered to be low, and therefore the risk of fire/explosion from contact with underground services has been disregarded from further assessment.

Blasting activities are carried out by appropriately trained and qualified personnel, and the Site has strict protocols to govern the use of explosives for this task. It is considered that with the implementation of these established management measures, there will be adequate control of the risk of explosion from blasting activities, therefore this has been disregarded from further assessment.

The risk of major accidents and / or disasters from fire / explosion is **not significant**.

Unplanned outages or disruption to services

Similar to above, given the lack of underground services within the Proposed Development area, the occurrence of unplanned outages or disruption to services from accidental interactions with services and utilities routed through the Site is considered to be low, and therefore the risk of outages or disruption has been disregarded from further assessment.

The risk of major accidents and / or disasters from unplanned outages or disruption to services is **not significant**.

Road traffic accidents resulting from Heavy Goods Vehicle (HGV) movements on and off site

With regards to on site events, the facilitation of private vehicle use on site is limited to the office and car park area. Movements within the working area are routed on defined and maintained haul roads with restricted speed limits.

HGVs will interact with the public domain and the adjacent road network. During these times there is potential for activities to result in a road collision or incident with a non-motorised member of the public. This may occur as a result of public negligence/error, objects on the road, or the failure of vehicle operators. It is considered that the occurrence of an accident involving a Site HGV is no more likely than typical occurrence of typical road traffic accidents. Furthermore, individual accidents and incidents are not considered to constitute a 'major

accident/disaster' for the purposes of this assessment, and therefore this has been disregarded from further assessment.

The risk of major accidents and / or disasters from road traffic accidents is **not significant**.

Contamination of the groundwater / surface water

In the context of water, large oil and fuel spills which enter groundwater would constitute a major accident or disaster. It is considered that there are sufficient design and management measures in place to negate the potential for such spills to occur. Fuels are / will be stored in bunded storage areas and given these management measures the likelihood of a major accident or disaster occurring is low and therefore this has been disregarded from further assessment. Detailed mitigation measures have been identified in Chapter 6 Water of this EIAR.

The risk of major accidents and / or disasters from groundwater and surface water contamination is **not significant**.

Flooding

The potential impacts of flooding on the Site have been considered in Chapter 6 Water of this EIAR. Given certain characteristics of the development, including: the size and scale of the Site, the lack of surface watercourse surrounding the Site, the topography, and the potential consequences involved in a flooding scenario, it is considered that such individual accidents are not considered to constitute a 'major accident/disaster' for the purposes of this assessment, and therefore this has been disregarded from further assessment.

The risk of major accidents and / or disasters from flooding is **not significant**.

Falling debris or the collapse of benches or quarry faces

The nature of the Proposed Development requires that rock is blasted and extracted from faces. The hazards posed by these faces are considered significant or potentially significant if a failure would directly or indirectly, be liable to endanger where people are likely to be found offsite, or likely to cause serious or fatal injuries to persons on or off-site.

The Proposed Development has been planned and designed to ensure it can be developed without becoming a significant hazard both during its operational and restoration phases, and during subsequent after use. The maximum safe height of excavated faces is influenced by the geology and physical properties of the material, the size, height and type of machinery and working methods used. However, where the face height exceeds 20 metres a geotechnical assessment is required.

Geotechnical assessments are to be carried out at quarry Sites in accordance with the requirements of the Safety, Health and Welfare at Work (Quarries) Regulations 2008 (S.I. No. 28 of 2008; as amended) for the provision of a Geotechnical Assessment (in accordance with the requirements of Regulation 55, namely Schedule 3: Geotechnical Assessments); and in accordance with the Health and Safety Authority's (HSA; 2020) 'Safe Quarry. Guidelines to the Safety, Health and Welfare at Work (Quarries) Regulations 2008'. Features under these regulations which constitute a significant hazard must be subject to geotechnical assessment at least once every two years with appropriate remedial works completed in accordance with any recommendations of the assessment.

With the implementation of such design, mitigation measures, management practices and the implementation of the recommendations identified in the geotechnical assessments it is considered that the likelihood of such risks / hazards occurring is '**Unlikely**'. Given the potential for greater than one fatality and less than five, and also the scale of the Proposed Development, it is considered that the classification of the impact will likely be no greater than '**Serious**'.

The impacts of such an incident are considered '**significant**' and in accordance with the DEHLG 2010 Guidance (Figure 2.2) the risk falls outside the zone where the Site is required to implement further preventative or mitigation measures. However, the Site should implement planning and preparedness measures and adopt an emergency plan in accordance with Section 3.5.2 of the L Behan Aggregates and Recycling Safety Statement and Site-Specific Risk Assessments (revision 08 January 2020). Once these plans are updated in accordance with the recommendations of the geotechnical assessment it is considered that the risk of major accidents from debris falls or the collapse of benches or quarry faces will be appropriately addressed in line with the DEHLG 2010 Guidance.

2.6.6 Do-Nothing Scenario

In the event that the Proposed Development does not proceed, it is considered that there will be no increase in risk of major accidents or disasters from: fire / explosion; unplanned outages or disruption to services; road traffic accidents resulting from Heavy Good Vehicle (HGV) movements, the contamination of the groundwater/ surface water; and flooding.

However, if the Proposed Development were not to proceed and the Site were to cease operations it is considered that the measures outlined above in relation to 'falling debris or the collapse of benches or quarry faces', would still be required to be implemented for the existing operational areas of the Site. Once the recommendations of the geotechnical assessment are adhered to it is considered that the risk of major accidents from debris falls or the collapse of benches or quarry faces will be appropriately addressed in line with the DEHLG 2010 Guidance.

2.6.7 Cumulative Effects

There are no cumulative effects identified with regards to the likely risks of a major accident or disaster in respect of the Proposed Development and other developments, plans or projects.