Non-Technical Summary

1. NON TECHNICAL SUMMARY

1.1 Introduction

This remedial Environmental Impact Assessment report (rEIAR) has been prepared on behalf of Ian Tinney, the owner and operator of Tinney's quarry, Trentaghmucklagh, St Johnstown, Co Donegal, to describe the significant impacts upon the environment arising from the existing operating quarry, which will assist and inform the Competent Authority (CA), An bord Pleanala in undertaking an environmental impact assessment of the development following from the granting of leave to apply for substitute consent in November 2021.

1.2 Site Description

The application site is a c. 9.9-hectare quarry situated approximately 4 km west of the village of St Johnston in east Co Donegal. The site is located in a rural area with the surrounding area predominantly farmland and forestry. There is a similarly sized quarry directly adjoining the site under separate control. Of the 9.9 hectares of the application site, an approximate footprint of 7.7 hectares has been extracted to various degrees. The site, and general area, has a long history of quarry development with the first records of quarrying in the area dating back to 1800's.

Access to the quarry is directly off the local L-5414 road via a concrete and hard-core lane.

1.3 Site Activities

Almost all of the soils and overburden has been stripped from the site to facilitate rock extraction or the creation of site infrastructure and haul roads. Most of the soils have been used to create screening berms around the perimeter of the site. These screening berms are heavily vegetated and aid visual and acoustic screening of quarry activities.

Rock has been extracted by predominantly mechanical means with the occasional requirement for blasting (on average once or twice per year). Rock won is then crushed and graded by a mobile crusher/screener and then stockpiled on site. Product is loaded and transported to market via rigid lorry. No washing of product occurs on site.

A significant quarry void has been created where most of the extraction has taken place.

Water is pumped from the quarry void for treatment by settlement to a series of two settlement ponds. Clean water is discharged from the settlement ponds to a tributary of the St Johnston Stream under licence from Donegal County Council.

1.4 Summary of Chronological History of the Tinney's Quarry

The chronological history and planning history of the quarry addresses: -

- Historic evidence of the quarrying on the subject lands.
- A 2004 application for a new access road to the quarry.
- The quarry registration under Section 261 of the Planning and Development Act 2000 (as amended).
- In assessing the quarry under Section 261A, Donegal County Council concluded that the quarry had commenced operation prior to 1st October 1964 and that the requirements in relation to registration under *section 261* were fulfilled and directed that an application for Substitute Consent be submitted to the Board.
- An application for Substitute Consent was submitted to the Board (SU 05E.SY0010), but a detailed request for further information was issue and was not addressed by Tinney's Quarry, following which the Board decided to refuse the application for Substitute Consent.
- In 2021 an application was made to the Board for leave to apply for Substitute Consent and the Board granted leave in November 2021.

Type of Stone Extracted

The product extracted from the quarry is shale rock (slate) which is extracted by means of mechanical extraction by means of two diggers with ripper toes, with blasting being carried out one or two times per year. A loader is then used to transport the material directly to one of two lorries that Mr Tinney owns and is transported directly off site or is taken to the on-site stone crusher/screener.

The extracted material is often transported directly to site for road fill in Counties Donegal and Derry. The material is registered as "Shale" for cross border export. No washing of stone takes place on site. One stone crusher and grader is used to grade material to 2" of 6" depending on demand. This crushed material is mainly used in agricultural drainage.

All stone products are removed from the site using two trucks owned by the quarry operators. The operator previously operated a third truck but as of 2022 uses only two trucks to transport material.

Plant and Machinery and Duration of Use

The following is a list of all machinery, both mobile and fixed, that is used in the quarry and the maximum number of hours that they may be in use on any given day. Not all machinery is used simultaneously or for the duration stated.

The following machinery is used in the quarry operation: -

- 4 track machines / excavators (maximum of 2 used together)
- 1 Crusher (up to 3 hours a day)
- 1 Screener (up to 3 hours a day)
- 1 Loading Shovel (used to fill trucks/ screener / crusher)
- 2 Lorries (used to move material off site)
- 1 Generator (used up to 1 hour each morning during wet periods)
- 1 Water pump (used up to 1 hour each morning during wet periods)

Planning Policy Context

The following planning policy context is considered in respect of the application: -

- National Planning Framework
- Regional Spatial and Economic Strategy
- Donegal County Development Plan 2018-2024

1.5 Section 5 Population and Human Health

Over the 10 year period to 2016 the population of the Trentaghmucklagh DED increased by 26%, with 20% of that increase coming in the 5 years to 2011, while the growth was more modest from 2011-2016 where it increased by 38 people or 5% at a time when the countywide population fell. The population of the small area in which the quarry lies, fell by 2 persons in the 2011-2016 period suggesting that there was little if any house development in the area.

The existing quarry currently has 4 full time workers as of June 2022, three of which are family members of the applicant, and represents a reduction from the peak of the mid 2000's when up to 10 people were employed in the quarry.

In Census 2016, nine people in the Small Area were engaged as Process, plant and machine operatives, with a total of 27 residents of the ED engaged in this type of work that the quarry would, fall under. Tinney's quarry and the adjacent quarry would account for some of those employees.

In census 2016 the number of occupied dwellings was 74, with 1 temporarily unoccupied while there were 17 other vacant houses, giving a total of 92 houses, The density of housing is 0.045 houses per hectare or one house per 22.16 hectares, which is extremely low.

The land uses within 500m of the quarry include the adjacent quarry to the east, houses and agricultural land as well as forestry to the northwest.

21 houses are recorded with in 500km of the quarry, while permission has been granted for 10 houses

within c1km since 2011, with permission refused for 4 houses on a single family landholding because of the format of the proposed development adjacent to each other in a prominent location. The nearest house remains c120 to the south west of the quarry. Permission was also granted for a number of domestic extensions and for agricultural structures.

There are no sports or social or amenity facilities in the vicinity of the quarry that would have been affected by the presence of the quarry.

Human health and its impact are largely dealt with in the other section of this EIAR and reference should be made to the relevant Sections.

Letterkenny Hospital is located 16km west of the quarry in Letterkenny Town. It provides a range of services including an Accident and Emergency Department while Altnagelvin Hospital in Derry City is located 19.2km from the quarry.
An earth berm has been constructed along a number of the site boundaries and acts as both a visual and acoustic barrier for the quarry from passing traffic while also providing a barrier to easy access to the quarry site.

The main issues arising from Quarry operations to human environment are health and safety issues including Dust emissions, Noise emissions, Blast events and Ground stability.

1.6 Section 6 Biodiversity

c. 3.25Ha of improved agricultural grassland and scrub habitat has been lost within the subject site since 1995 with the gradual stripping of vegetation and extraction of rock. Potential impacts considered are the loss of habitat, dust and noise generated by the stripping and extraction works and potential unregulated water discharge containing a high loading of suspended solids.

The stripped overburden was re-used within the site for the creation of screening berms (2-3m in height) along the boundaries of the site. These berms have revegetated naturally with native species and have integrated the development into the landscape. The screening berms provide both visual and acoustic screening of the site from most of the surrounding environs and aid in eliminating wind-blown dust. The addition of the berms has improved the quality of cover for wildlife and has increased biodiversity within the site. Additionally, a full restoration plan outlined in chapter 15 of this rEIAR will be implemented once quarrying activities have ceased which will allow the quarry void to be reclaimed by nature over time, further increasing the biodiversity of the site.

Areas previously stripped for extraction were stripped in a controlled manner with drains and silt traps in place throughout all stripping and excavation works which reduced the risk of runoff containing silt. All

runoff onsite was and will continue to be treated through the existing robust settlement system before discharge offsite (discharge from the site has been under license since 2009). Monitoring results have shown that the quality of the discharge has always been compliant with licence conditions. A hydrocarbon interceptor will be installed within the drainage system downstream of Settlement Pond 1 to further treat runoff before discharge offsite.

Remedial and proposed future mitigation measures in relation to dust and noise are detailed below in section 9 and 10.

Potential impacts from the loss of habitat, dust and noise generated by the stripping and extraction works and potential unregulated water discharge containing a high loading of suspended solids have all been assessed as imperceptible post mitigation.

1.7 Section 7 Land, Soils & Geology

Soils and subsoils have been stripped from the site. Most of the soils/subsoils have been utilised in the creation of screening berms. The loss of bedrock is an inevitable consequence of quarry activity.

Potential impacts are considered for the hydrocarbon contamination of bedrock, soils and subsoils through the accidental spillage of fuel or leak from a site vehicle or site plant. This has been assessed as a slight negative impact before any mitigation measures were put in place. Mitigation measures such as regular inspections, refuelling procedures etc have been in place so this effect is assessed as imperceptible.

Potential impacts are considered for the loss of land & soils/subsoils due to extraction. These are considered to be somewhat offset by the creation of new habitats on restoration of the quarry. The impact of the loss of land & soils is assessed as slightly negative following mitigation measures.

Impacts on the loss of bedrock geology as an extracted product are considered as moderately significant as this is a permanent loss of a resource.

1.8 Section 8 Water

<u>Water management on site</u>

The quarry void forms a significant portion of the site and incident rainfall is naturally drained into it. Extraction has continued vertically and the floor of the quarry void is at or below the local groundwater level. The floor of the quarry is periodically pumped out to maintain a dry working environment. The amount of pumping required is related to the volume of incident rainfall. Groundwater ingress to the quarry floor is observed to be exceptionally slow due to the nature of the bedrock within the site.

Water is pumped from the quarry floor to a series of two settlement ponds for settlement treatment before

discharge off site to a tributary of the St Johnston Stream.

Impact on Surface Water Environment

Discharge from the site is to a tributary of the St Johnston Stream which flows south past the site and into Lough Foyle immediately east of St Johnston village. The discharge from the site has been under licence from Donegal County Council since 2009 and monitoring results have shown that the quality of the discharge has always been compliant with licence conditions. The settlement pond treatment system in place at the site is shown to have adequate capacity to treat all waters within the site before discharge. Monitoring of the site discharge and the receiving waters has shown that there is no significant negative effect on the tributary of the St Johnston Stream from on-site activities.

Impact on Groundwater Environment

A series of four boreholes were constructed to assess the groundwater regime. Groundwater quality was tested and shown to be of a high standard. Tests were carried out to assess the likely water movement through the bedrock on site and the level of groundwater movement was shown to be exceptionally slow as expected with the slate bedrock at the site. The extraction of rock has created a large quarry void which has consequently lowered the local water table accordingly but due to the low hydraulic conductivity of the bedrock there are no negative effects on groundwater levels outside of the site boundary. Groundwater levels and groundwater quality outside the site boundary will remain unaffected by activities at the site.

1.9 Section 9 Noise & Vibration

Impacts from Noise

Potential impacts for noise are considered for the stripping of overburden and construction of berms, extraction and processing of rock, and increased traffic connected with site activities. A noise survey was conducted of several noise sensitive locations surrounding the site and the noise levels from quarry related activity was seen to be significantly below guideline values stipulated by the EPA. Some basic modelling was undertaken examining potential worst case scenarios for historical noise levels during peak production of the quarry and these were also shown to be within guideline values. The physical location of the extraction and processing activities within the quarry void and the acoustic screening provided by the vegetated berms and other mitigation measures in place have ensured noise levels have been acceptable. All sources of noise from the quarry have been assessed as not significant.

Impacts from Vibration

Most extraction has taken place mechanically but occasionally (once or twice per year) blasting has been employed. Blasting took place in accordance with applicable legislation and under a range of suitable

mitigation measures such as optimum blast ratio, blasting plan and specific hours of operation. There have been no complaints recorded in any of the previous blasts.

There was no adverse impact anticipated with vibration due to previous blasting.

1.10 Section 10 Air

Potential impacts are considered for the generation of airborne dust from activities on site. The main activities that have potential to generate dust are the crushing and screening of rock to create product, dust blow from stockpiles of material and the movement of plant and vehicles around the site. Dust deposition was assessed in relation to local dwellings, human health and local vegetation.

A dust deposition survey was undertaken to assess the current levels of dust deposition near the boundaries of the site. The levels of dust deposition were observed to be very low. In periods of dry weather dust was generated but did not seem to leave the quarry void.

Mitigation measures including the spraying of haul roads and stockpiles has been employed to keep dust generation to a minimum.

The impact on air quality and in particular dust generation and deposition from the site is assessed as having no significant effects.

1.11 Section 11 Climate

Potential impacts to climate from activities on site are from the operation of plant and the movement of vehicles generating exhaust emissions, and from the loss of vegetation which has been necessary to facilitate extraction. The local source of stone product is a positive impact as it reduces the distance customers have to travel or product has to be transported to market.

Mitigation measures in place have included good vehicle management, regular energy audits, buying standards and a comprehensive landscaping plan to offset vegetation loss and increase biodiversity.

There is expected to be a slight positive impact on climate following the implementation of the recommended mitigation measures.

1.12 Section 12 Traffic

The quarry is served by the served by the L-5414 this road leads directly onto the L-1264-4 which is a local primary road. A traffic survey using a motion sensor camera was carried out over a 3day period to assess the volume of traffic on the L-1264-4 and the direction in which traffic was generally travelling.

Findings from the survey found that an average of 14 vehicles per hour past the entrance road of the quarry either going West towards Galdonagh and Manorcunningham or East towards St. Johnston. The majority of traffic were travelling towards Galdonagh and Manorcunningham perhaps this road was being used by vehicles to get to Letterkenny town and to avoid traffic on the Regional road at busier times of the day to. Assuming quarry working hours are 8-5pm, the projected vehicle movements relating to the workers traffic is 1 per hour from the quarry which would not have a significant impact on traffic levels. The impact on the roads and traffic is therefore assessed as imperceptible. No specific mitigation measures proposed as the quarry traffic expected will not pose any significant impact on the L-1264-4 road or surrounding area.

1.13 Section 13 Material Assets

The material assets considered in this chapter of the rEIAR include Surface Water Drainage, Foul Drainage, Water Supply, Power, Gas and Telecommunications. These are resources that are valued and are intrinsic to the area.

In the past water requirements for the office, canteen and toilet facilities were supplied by pump from the nearest groundwater sump. There are currently no requirements for welfare water on site as the welfare facilities are provided offsite. There is no washing of quarry product. Water is required for wash. Dust suppression water and water for the proposed wheel wash is supplied from the settlement dust suppression in periods of prolonged dry weather and water is required for the proposed wheel ponds within the site. Welfare facilities are now provided at the applicant's dwelling house a short distance off site.

The existing quarry does not result in a significant increase of traffic from the quarry. Noise, vibration and air emissions are below the recommended guideline values at the nearest dwellings. Regular environmental monitoring of noise, vibration and dust emissions will be carried out in order to ensure the development is compliant in relation to the levels set.

The existing berms were created with the overburden extracted from the sit. These berms are now heavily vegetated with some growing semi mature native trees. These berms have also become colonised by native species and have integrated the development into the landscape. Additional planting to provide further screening of the quarry is recommended in section 15 as a mitigation measure to further reduce the visual impact of the subject site.

Mitigation Measures are detailed in the relevant sections of this rEIAR to ameliorate impacts on Material Assets – Site Services (see Sections 6-10 for all relevant mitigation measures). No residual impacts in relation to site services are envisaged.

1.14 Section 14 Cultural Heritage

There are no Recorded Archaeological Monuments within a 1km distance from the subject site therefore the quarry is within the noise and ground vibrations limits. The closest protected structure is located 2.15km from the quarry. Negative effects from noise and vibration after mitigation have been assessed as imperceptible. Regarding culture and heritage the subject site does not affect any aspect of folklore, tradition, religion, language and dialect. Natural Assets concerning the loss of habitat within the site post mitigation has been assessed as imperceptible also there are no renewable resources (wind energy, hydro power) associated with the quarry site and no impact on any renewable resources outside the site boundary is predicted to have occurred as a result of the development.

The transport network has not been significantly affected by the quarry activity. Currently there is an average of 5 loads per day leaving the quarry equating to 1 vehicle movement per hour. This will not have any significant impact on the transport network.

There has not been any significant negative impacts in the past nor expected for the future to Material Assets with the continued operation of this quarry as the existing utilities are limited. There is currently no mains water supply or mains wastewater facilities available to the subject site. Welfare facilities are currently provided at the applicant's dwelling house. There is no washing of quarry product. There is currently no electricity or telecommunications supplied to the site.

Man-made material assets such as transport infrastructure, local settlements, and major utilities, are not negative effected by the quarrying activities. Material assets post mitigation have been assessed as imperceptible.

1.15 Section 15 Landscape & Restoration

The subject site is classified as being within in a Strong Rural Area and an Area of High Scenic Amenity under the Donegal County Council development plan. Land use immediately surrounding the quarry site is predominantly agricultural with some blocks isolated of commercial forestry (WD4) to the North and Northwest of the site. Another quarry owned by a separate operator lies to the east of the subject site with a large ridge separates the two quarries.

A field survey was undertaken and it was found that quarry faces are visible from many Northwest, Northeast and Eastern viewpoints. The magnitude of the visual impact as a result of the development has therefore been currently assessed as "Moderate and the Mitigation measures that have been proposed will reduce this to "Slight".

The proposed mitigation measures are as follows: -

- Planting the Northern berms with a mix of native trees to screen the development, this will also help support a wide range of insects and animals while contributing to the ecological value of the area.

- Using plants suited to the given soil type and conditions to reduce the need for expensive and intrusive remedial measures (ex. Replacing failed plants).

- All planting of trees and shrubs must take place during the first dormant season, avoiding times of frost.

- Maintaining and monitoring existing berms that are 2.5-3m in height throughout the subject site to reduce the loss of biodiversity of the subject site area and reduce environmental impacts of quarrying activity.

- A full and comprehensive restoration plan must be submitted and agreed with the planning authority in relation to one or both of the following as they become relevant:
    - Restoration of the 7.69 ha excavation area.
    - Restoration of the 9.92 ha entire subject site.

1.16 Section 16 Interactions

Inter-relationships relate to the interactions between impacts within a project and the interactions between impacts identified under one topic with impacts identified under another topic. Each of the various environmental and related topics have been discussed separately in the preceding sections of the rEIAR and the major interactions between the recorded environmental impacts are accessed within the individual chapters of the rEIAR.

On examining the interactions of the potential impacts for this existing quarry, one must investigate the combined physical, environmental, visual and socio-economic impact on the receiving environment. Table 1 illustrates the interaction of impacts assessed for this project.

Table 1: Interactions

	Population & Human Health	Biodiversity	Lands, soils & Geology	Water	Climate	Air	Noise and Vibration	Traffic	Landscape and Restoration	Material Assets	Cultural Heritage
Population & Human Health											
Biodiversity											
Land, soils & geology		X									
Water	X	X	X								
Climate	X										
Air	X	X	X	X	X						
Noise and vibration	X	X									
Traffic	X					X	X				
Landscape and Restoration	X	X	X								
Material assets	X		X					X	X		
Cultural Heritage											

Population & Human Health and Water

Contaminants or leakages from plant and vehicles can potentially leak into surface waters and groundwater which could impact on water quality. Procedures are in place for dispensing fuel, servicing plant and equipment and for dealing with accidental spillages should they arise. Re-fuelling of site vehicles is done

from fuel tankers that visit the site and no hydrocarbons are stored on site. Strict adherence to pollution control protocols will be for re-fuelling operations. Drip trays must be used and spill kits are available if required. Re-fuelling of plant will continue to be carried out using off-site delivery vehicles. Effluent from the processing and manufacturing area is recycled through a pair of settlement ponds. A hydrocarbon interceptor will be installed within the drainage system leading from the ponds to the St Johnstown Stream. Given that there will be no effect on water quality standards, the effects on human health from water are assessed as Imperceptible.

Population & Human Health and Climate

Plant associated with the operation of the development will result in emissions to air associated with the day-to-day operations undertaken at the quarry which are difficult to eliminate. Measures in place will reduce emissions in so far as possible in order to reduce the impact on climate from day-to-day operations.

Population & Human Health and Air

The primary interaction between air and humans would relate to potential dust emissions associated with extraction, processing, manufacturing and transport of material around and off-site. Emissions from the processing plants and exhaust emissions from vehicles and plant are also a source of air pollutants. Dust deposition monitoring will be undertaken to ensure that levels are within the recommended guideline values. Dust suppression actions are included as part of mitigation. These include water sprinkling and reduced speed within the subject site as well as additional planting on the site perimeter. Provided that dust emission limits applied to the quarry are adhered too, no residual impacts to the air quality are envisaged with the impacts assessed as imperceptible.

Population & Human Health and Noise & Vibration

Activities undertaken at the quarry generate noise and vibration associated with the fragmentation of rock by blasting means, extraction, processing, loading of vehicles and transportation of material within and off site. Various measures are implemented to ensure noise levels are not elevated. A projected noise and vibration survey and recorded noise levels at the quarry showed that the proposed development has result in an increase in noise levels above recommended guideline values at noise sensitive receptors. Regular noise monitoring and vibration and air overpressure monitoring associated with blasts will be undertaken to ensure levels at noise sensitive locations are below recommended guideline values. Provided that noise limits applied to the quarry are adhered to no residual impacts are envisaged with the impacts assessed as imperceptible.

Population & Human Health and Traffic

Approximately 5 loads of product per day are transported off site creating approximately 10 traffic movements per day. This equates to a mean flow of 1 vehicle movement/hour. It is a possibility that

demand could increase over a time period which would result in an increase in machinery operating and delivering lorries on the road. Traffic on the adjacent local road was recorded as being low in the traffic surveys undertaken as part of this assessment. The surveys over 3 days (10hrs per day, 8am-6pm) show that an average of 9.7 vehicles per hour travel west along the local road where the site entrance is located while 2.3 vehicles travel east of the quarry towards St Johnstown. The quarry generated 2 car trips, 2 tractor trips and 8 truck movements during the same period. The vehicle movement from the quarry have little to significant negative effect on traffic levels with c1 movement per hour. The vehicle movements relating to workers traffic to and from the quarry is also considered as not significant as three of the staff of the quarry are family members of the operations and live close to the quarry. The impact on roads and traffic is therefore assessed as imperceptible.

Population & Human Health and Landscape & Restoration

The proposed landscape and restoration plan will serve to reduce the impact associated with quarrying activity. The creation of a new berms and associated planting will screen the proposed new extraction area from the western and northern approaches to the quarry. The restoration of the quarry on completion of extraction will aid in increasing the biodiversity of the area. The associated impacts have been assessed as imperceptible.

Population & Human Health and Material assets

Extraction of rock has and will result in the loss of a geological resource which cannot be replaced. The proposed landscape and restoration plan will mitigate the impact associated with quarrying activity. Quarry product will serve the demand for material both locally and regionally.

Biodiversity and Land, Soils & Geology

Remedial mitigation and proposed future mitigation measures have been included in order to minimise the potential effects on groundwater and soil quality and wildlife that could have occurred as a result of the quarrying activity. The proposed restoration plan will also offset the impact of quarrying activity and increase the biodiversity of the site.

Biodiversity and Water

A robust existing settlement pond and wetland system treats all runoff from the subject site. A hydrocarbon interceptor will be installed within the drainage system downstream of Settlement Pond 1 going forward to further treat all runoff before discharge offsite to the St Johnston stream. There has not, and will not, be any impact on the biodiversity of the area due to the remedial mitigation measures in place and the proposed future measures to be implemented.

Biodiversity and Air

Activities undertaken at the quarry have had the potential to create windblown dust which can impact on flora and fauna. Remedial mitigation and management measures as described throughout this rEIAR have been in place at the quarry to prevent dust blow. Monitoring must continue to be undertaken on a regular basis to ensure levels of dust deposition are within the recommended guideline values.

Biodiversity and Noise & Vibration

Extraction of the resource and related traffic could have led to noise emissions. The current noise levels for the existing quarrying activities are well within the levels recommended by the EPA Environmental Management Guidelines-Environmental Management in Extractive Industry (Non-Scheduled Minerals). Remedial mitigation has been in place to protect wildlife onsite and in the surrounding environs and it has been established that quarrying activity did not and will not result in any negative impact on the flora and fauna in the vicinity of the subject site. Noise and vibration emissions will continue to be monitored and maintained within the parameters specified.

Biodiversity and Landscape & Restoration

Overburden won from site clearance was used to create berms around the site boundaries. These berms have been colonised by native species and have integrated the development into the landscape. The existing berms to the North of the quarry site near the settlement ponds will be planted with native trees which will reduce the visual impact of the subject site and add to the biodiversity value of the area. The use of native species will support a wider range of insects and animals and will contribute to the connectivity and biodiversity value of the region. A landscape and restoration plan has also been compiled to offset the impact associated with quarrying activity. This includes reinstatement of the quarry upon cessation of all activity (see chapter 15 of this rEIAR for full detail). Post mitigation the loss of habitat has been assessed as imperceptible.

Land, Soils & Geology and Water

The removal of overburden and bedrock has had the potential to increase the risk of contamination of groundwater in the event of accidental spillages occurring. All oils and lubricants are currently stored in a bunded area off site. All fuel must continue to be stored in bunded fuel tanks which will contain potential leaks from tanks. The water management system (settlement ponds) already in place as detailed in section 8 also protect receiving waters. A hydrocarbon interceptor will be installed within the drainage system downstream of Settlement Pond 1 going forward to further treat all runoff before discharge offsite to the St Johnston stream.

Land, Soils & Geology and Air

Overburden removed from the from the previously extracted areas was used to create screening berms

around the site boundaries. The extraction of material and storage of material onsite could have given rise to windblown dust. Measures and procedures are currently in place and will continue to be implemented going forward to mitigate against ground and air pollution by machinery and associated activities.

Land, Soils & Geology and Landscape & Restoration

Within the subject site, previous landscaping works included the construction of screening berms around the site boundaries. Further planting of these berms will be undertaken. Upon cessation of all quarrying activities, a full restoration plan as detailed within chapter 15 of this rEIAR will be implemented. The impact on the geology and landscape will be mitigated in the longer term by the proposed landscape and restoration plan.

Land, Soils & Geology and Material Assets

Rock extracted from the quarry is used as a raw material in the construction industry which is seen as a beneficial use. The quarry has created employment in the area and currently employs 4 people with further indirect employment also created. The continuation of quarrying activity will continue to provide employment in this rural area.

Water and Air

Dust associated with quarrying activities has had the potential to contaminate surface water and groundwater if appropriate measures were not in place. Dust monitoring has been carried out and will continue to be carried out on a quarterly basis going forward at the designated monitoring locations (see section 10 of the accompanying rEIAR).

Climate and Air

Plant and machinery operating at the quarry have resulted in emissions to air and climate associated with the operations which is difficult to mitigate against. Energy conservation measures and good management practices are currently in place and will continue to be implemented moving forward which serves to reduce the emissions in so far as is possible.

Air and Traffic

Currently there is an average of 5 loads per day leaving the quarry, resulting in 1 vehicle movement per hour. In the early 2000's when the quarry was operating at peak trade, the quarry would have been producing approximately 20 loads per day which is significantly more in comparison to present times. As the average vehicle movement from the quarry has reduced since peak times, potential air emissions have also reduced. Quarry traffic is not proposed to increase going forward.

Noise & Vibration and Traffic

Traffic associated with the development has generated noise and has created a minor source of vibration.

The development has not resulted in a significant increase in quarry traffic on the local road infrastructure therefore noise levels have not increased due to traffic associated with the development.

Landscape & Restoration and Material Assets

The proposed landscape and restoration plan will offset the impact associated with quarrying activity.

Material Assets and Cultural Heritage

Archaeological artefacts are part of our national heritage and history. The nearest Recorded Archaeological Monuments to the quarry, a standing stone is 850m distance from the subject site, therefore the quarry is and has been within the noise and ground vibrations limits. The quarry and associated activities has not had nor will have any negative impact on the existing cultural links within the surrounding environs.

1.17 Mitigation Measures

Population and Human health

It in recommended that an additional landscaping berms are constructed which will help eliminate the limited visual impact of the quarry as well as further reducing potential noise, vibration and dust impacts on the property. This berm measure should be a permanent feature and will form part of the restoration programme as the quarry progressively becomes exhausted.

Biodiversity

Summary of Mitigation Measures proposed to protect aquatic environment – should be read in conjunction with Section 8 (Water).
• Areas previously stripped for extraction were stripped in a controlled manner over the lifetime of the quarry, thus reducing the risk of runoff containing silt according to the applicant. • Drains and silt traps were in place throughout all stripping and excavation works according to information supplied by the applicant. • Runoff from extraction and processing areas was always directed towards the nearest available pond/sump for settlement treatment before any potential discharge from site. • The robust settlement system treats all effluent before discharge offsite • Discharge from the quarry is through a single discharge point and has been under licence since 2009.

- The quarry must continue to adhere to the terms and condition of the current water discharge licence.
- All oils and lubricants are stored in a bunded area off site.
- Refuelling of plant on site is carried out using a fully bunded bowser or by licenced fuel contractor with mobile tanker.
- Drip trays are used for all refuelling operations. Best practice for refuelling is incorporated into the Environmental Management System for the site.
- Flow directly between Settlement Pond 1 & 2 must be piped to regulate the flow going forward.
- A hydrocarbon interceptor must be installed within the drainage system downstream of Settlement Pond 1.
- Maintain the hydrocarbon interceptor (in line with the manufacturer's instructions) which will be installed into the drainage system immediately before discharge of surface waters off site.
- Regular inspections and maintenance scheduling must continue to take place for all plant and vehicles to minimise the potential for malfunction or leak
- An emergency spill kit with oil boom, absorbers etc. must continue kept on site for use in the event of an accidental spillage/leak.
- Regular visual monitoring of all surface waters onsite (including settlement ponds) for any surface sheen or sign of potential hydrocarbon pollution must continue to be undertaken.
- Regular maintenance of settlement tanks must be undertaken to ensure efficiency and appropriate disposal of material removed.
- All extraction and material handling activities must be suspended for the duration of a red level rainfall warning issued by Met Eireann
- The site must maintain and continually update the environmental monitoring programme and monitor water, noise, dust, and blasting on a regular basis to demonstrate that the development is not having an adverse impact on the surrounding environment.

Summary of Mitigation Measures for protection of birds and other wildlife

- Recorded noise levels from quarrying activity have been measured at a level well below typical guideline limit values.
- Plant used at the site must continue to have noise emission levels that comply with the limiting levels defined in EC Directive 86/662/EEC and any subsequent amendments. Any plant that is used intermittently must be shut down when not in use to minimise noise levels.
- All extraction and processing activities must continue to follow the guidelines as set within BS 5228 -1:2009+A1 2014. This includes guidance on several aspects of construction site practices, which include, but are not limited to: (a) Selection of quiet plant, (b) Control of noise sources, (c) Screening, (d) Hours of work.
- The best means practical, including proper maintenance of plant, must continue to be employed to minimise the noise produced by on-site operations.
- All vehicles and mechanical plant must be fitted with effective exhaust silencers and maintained in good working order for the duration of the contract.
- Compressors must be of the "sound reduced" models fitted with properly lined and sealed acoustic covers which must be kept closed whenever the machines are in use and all ancillary pneumatic tools must be fitted with suitable silencers.
- All motors and pulleys must be maintained to a high standard with regular maintenance so as to avoid any tonal or impulsive components in the emission.
- The screening berms around the site boundaries have naturally recolonised with a mixture of native shrubs which act an acoustic barrier for the site.
- The processing plant (crushing and screening) generally has been located in the quarry floor area thereby giving maximum barrier attenuation effect.
- Proper management procedures (pre-blasting management procedures, loading management procedures and blasting management procedures) must be implemented and in place at all times moving forward.

Summary of Mitigation Measures for removal of grassland/scrub habitat
• This habitat is dominant in the surrounding environs. The removal of c.3.25Ha of grassland and scrub represented a small area of grassland and scrub in the wider receiving environment. • Overburden won from site clearance was used to create berms around the site boundaries • The screening berms have naturally recolonised with native species which have improved the overall biodiversity within the subject site and have created wildlife corridors, connecting the subject site with the surrounding environs. These support a wide range of insects and animals and has contributed to the ecological value of the area. • A full restoration plan outlined in chapter 15 of this rEIAR will be implemented once quarrying activities have ceased which will allow the quarry void to be reclaimed by nature over time. • The settlement ponds for this site are adequately sized to deal with the runoff generated from site stripping and extraction works so there is, and was, no risk of flooding occurring within the site nor in the surrounding environs due to the removal of the grassland habitat (see chapter 8 of this rEIAR for more detail).

Section 7 Land, Soils and Geology

The following mitigation measures have been in place, and some additional measures are proposed, to minimise the impacts of quarrying activity on the land, soils, and geology of the application site:

- A hydrocarbon interceptor is to be installed into the drainage system downstream of Settlement Pond 1
- Oils and lubricants are stored in a bunded area off site.
- Refuelling of plant on site is carried out using a fully bunded bowser or by licenced fuel contractor with mobile tanker.
- Drip trays used for all refuelling operations. Best practice for refuelling is incorporated into the Environmental Management System for the site.
- Regular inspections and maintenance scheduling take place for all plant and vehicles to minimise the potential for malfunction or leak.
- An emergency spill kit with oil boom, absorbers etc. kept on site for use in the event of an accidental

spillage/leak.

- Regular visual monitoring of all surface waters onsite (including settlement ponds) for any surface sheen or sign of potential hydrocarbon pollution.
- Geotechnical assessments of quarry faces over 20 m height, and those over 30 m height with multiple benches must be conducted by a geotechnical specialist.
- Overburden and unsuitable material have been used for the creation of screening berms around the external boundary of the application site.
- A landscaping and restoration plan, (Section 15, Landscaping and Restoration) must be implemented when activities on site have ceased.

Section 8 Water

Summary of Mitigation Measures Proposed
• Adequate settlement pond capacity to reduce sediment load in the effluent to acceptable levels before discharge off-site (Section 8.6.2).
• Suitable drainage system in place to direct effluent and runoff that may become contaminated with suspended sediment to the settlement pond and system.
• Regular maintenance of settlement ponds (and drainage system) to ensure efficiency and appropriate disposal of material removed.
• Suspension of extraction and material handling activities for the duration of a red level rainfall warning issued by Met Eireann.
• Regular monitoring of the discharge point.
• Single discharge point subject to the conditions of a trade discharge licence from Donegal County Council.
• Dedicated piped channel proposed between Settlement Pond 1 & 2.
• Lubricants stored in a bunded area in machinery shed off site.
• A hydrocarbon interceptor is proposed within the drainage system downstream of Settlement Pond 1.
• Refuelling of static plant on site carried out using a fully bunded bowser/mobile fuel truck.

• Drip trays used for all re-fuelling operations. Best practice for re-fuelling incorporated into the Environmental Management System for the site.
• Regular inspections and maintenance scheduling for all plant and vehicle to minimise the potential for malfunction or leak.
• Emergency spill kit with oil boom, absorbers etc. is proposed to be kept on site for use in the event of an accidental spillage/leak.
• Regular visual monitoring of all surface waters onsite for any surface sheen or sign of potential hydrocarbon pollution.

Section 9 Noise & Vibration

Summary of Mitigation Measures Implemented & Proposed
• Acoustic berms of 2.5 to 3m height have been constructed along the extraction boundary of the site where possible.
• The processing plant (crushing and screening) must be located in the quarry floor area thereby giving maximum barrier attenuation effect
• The screener systems must be in a housing envelope
• All motors and pulleys must be maintained to a high standard with regular maintenance so as to avoid any tonal or impulsive components in the emission.
• All mobile plant on site must have well maintained silencers.
• Machinery must be throttled down or turned off when not in use.
• A noise buying standard must be put in place where any replacement of mobile or fixed plant is considered.

Section 10 Air

The following mitigation measures have been in place to minimise the impacts of quarrying activity on the air quality of the application site and surroundings:

- Dust monitoring will continue to be carried out quarterly at the designated monitoring locations if required
- The timing of operations optimised in relation to meteorological conditions

- Material in outdoor stockpiling will be conditioned with water to minimise dust during dry and windy conditions. In addition, stockpiles will be sited to take advantage of shelter from wind
- Screening berms grass-seeded and planted to eliminate wind-blown dust
- Internal haul roads compacted and maintained
- A water bowser/sprayer will be available at all times to minimise dust during dry and windy conditions
- Speed restrictions of 20 kph maintained to limit generation of fugitive dust (within site and access road)
- Wheel-wash is proposed at the entrance/exit of the quarry

Section 11 Climate

- Strict adherence to good operational practice such as switching off plant and vehicles when not in use.
- All plant and vehicles regularly serviced to ensure they are running as efficiently as possible.
- Energy consumption ratings considered when upgrading new vehicles associated with the site.
- Regular energy audits in order to assess energy requirements and areas where energy usage can be reduced. This will lead to a reduction in greenhouse gas emissions.
- Landscaping plan (section 15) to offset vegetation loss and increase net biodiversity.

Section 12 Material Assets – Traffic

There are no specific mitigation measures proposed as the quarry traffic expected will not pose any significant impact on the L-1264-4 road or surrounding area.

Section 14 Cultural Heritage

There has not been and will not be any significant negative impacts to Cultural Heritage Assets with the continued operation of this quarry. No mitigation measures are required in this regard.

Section 15 Landscape and Restoration

A full and comprehensive restoration plan must be submitted and agreed with the planning authority in relation to one or both of the following as they become relevant:

- Restoration of the c. 7.69-hectare excavation area.
- Restoration of the entire subject site of c. 9.92 hectares.