

Chapter 16:

INTERACTIONS / INTER-RELATIONSHIPS

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16 INTERACTIONS

16.1 Introduction

This Chapter addresses the cumulative impacts, indirect impacts and main interactions between different aspects of the environment that are, or may be, impacted on as a result of the quarry and associated activities. Only topics that could be logically linked to the development have been examined in detail. Accordingly, when a topic is not mentioned, it is concluded that no potential for conflict exists.

16.2 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 Chapters of the rEIAR and the major interactions between the recorded environmental impacts are assessed 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 16.1 illustrates the interaction of impacts assessed for this project.

Table 16.1: 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											

16.2.1 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 using a mobile fuel contractor. 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 is to be carried out using a mobile bowser. The mobile bowser must be fully bunded and drip trays used when re-fuelling and spill kits available if required. Effluent from the processing area is captured in a dedicated sump and recycled. A hydrocarbon interceptor is proposed within the drainage system. Given that there will be no effect on water quality standards, the effects on human health from water are assessed as Imperceptible.

16.2.2 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.

16.2.3 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. Provided that dust emission limits applied to the quarry are adhered to no residual impacts to the air quality are envisaged with the impacts assessed as imperceptible.

16.2.4 Population & Human Health and Noise & Vibration

Activities undertaken at the quarry will generate noise and vibration associated with extraction, processing, manufacturing, loading of vehicles and transportation of material within and off site. Various measures will be implemented to ensure noise levels are not elevated. A projected noise survey of the quarry showed that the proposed development has not resulted in noise levels above recommended guideline values at noise sensitive receptors. Regular noise monitoring 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.

16.2.5 Population & Human Health and Traffic

It is predicted that approximately 2 loads of product per week will be transported off site. One by HGV, and one by van & trailer or LGV. There are a maximum of 4 car movements per day relating to employees coming to and leaving the workplace. The current volume of traffic associated with quarry activity is low and insignificant when compared to the traffic volumes on the adjacent N56 national route. Historically, there may have been more activity at the quarry but allowing for a doubling of quarry related traffic will still not create a significant negative impact to either the road network or traffic volumes in the surrounding area. The impact on roads and traffic is therefore assessed as imperceptible.

16.2.6 Population & Human Health and Landscape & Restoration

The proposed landscape and restoration plan will serve to reduce the impact associated with quarrying activity. The planting of existing berms with native wildflowers and the supplementary native tree/shrub planting proposed along the western boundary will further screen the extraction area. 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.

16.2.7 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.

16.2.8 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.

16.2.9 Biodiversity and Water

An existing settlement pond system treats all runoff from the subject site. A hydrocarbon interceptor is proposed within the drainage system downstream of the main settlement pond going forward to further treat all runoff before discharge offsite to the Eany Water River system. 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.

16.2.10 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.

16.2.11 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.

16.2.12 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 full 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, *Landscape & Restoration*, of this rEIAR for full detail). Post mitigation the loss of habitat has been assessed as imperceptible.

16.2.13 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. There is not, and has not been, any fuel storage on site. The water management system (settlement ponds) already in place as detailed in chapter 8 also protect receiving waters. A hydrocarbon interceptor will be installed within the drainage system downstream of the main settlement pond going forward to further treat all runoff before discharge offsite to the Eany Water River system.

16.2.14 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.

16.2.15 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 planned 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.

16.2.16 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 2-3 people with further indirect employment also created. The continuation of quarrying activity will continue to provide employment in this rural area.

16.2.17 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 shown to be well within threshold limit values and monitoring can be continued if required. (see chapter 10 of the accompanying rEIAR).

16.2.18 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 missions in so far as is possible.

16.2.19 Air and Traffic

Currently there is an average of 2 loads per week leaving the quarry (one HGV load and one van & trailer or LGV load). Historically there may have been more delivery loads associated with quarrying. It is not expected that traffic levels associated with the quarry are likely to increase from current levels.

16.2.20 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 an increase in quarry traffic on the local road infrastructure therefore noise levels have not increased due to traffic associated with the development.

16.2.21 Landscape & Restoration and Material Assets

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

16.2.22 Material Assets and Cultural heritage

Archaeological artefacts are part of our national heritage and history. There are two Recorded Archaeological Monuments within a 1 km distance from the subject site. Both are over 500m south of the site and the national route N56 intervenes. The nearest protected structure is over 1.4 km to the west. The quarry and associated activities have not had, nor will have, any negative impact on the existing cultural links within the surrounding environs.

16.2.23 “Do Nothing” Scenario

If the development to extract rock and process aggregate is not granted substitute consent, then local construction end users will be forced to source quarry product from further afield. This will result in a higher carbon footprint for these products. The provision of 2-3 local jobs and the secondary benefits that this brings to the local community will cease if the project does not achieve substitute consent.