Chapter 17:
MITIGATION & MONITORING SUMMARY

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17 MITIGATION & MONITORING SUMMARY

17.1 Introduction

This final section of the rEIAR provides a summary of the mitigation measures proposed to avoid, reduce or remedy the potential impact identified and monitoring proposed to ensure that mitigation measures are effective.

17.2 Population and Human Health

17.2.1 Mitigation Measures

The following mitigation measures should be implemented and/or continuously practiced at the site.

- Security fencing and warning signs must be erected around the boundary of the quarry where required.
- Daily inspections of the quarry must be undertaken.
- Daily inspections of the public roads in the vicinity of the entrance to ensure that the road is free of dirt and debris must be undertaken.
- Noise and dust must be maintained within permitted legal limits.

17.2.2 Monitoring

Environmental monitoring must be carried out in accordance with the requirements of the conditions attached to the grant of substitute consent and/or planning permission.

17.3 Biodiversity

17.3.1 Mitigation Measures

- A water management system has been in operation at the quarry providing attenuation prior to surface water discharge.
- A new proposed upgraded water management system is to be put in place as detailed in Chapter 8, *Water*.
- Retain woodland moving forward.
- Implement sensitive planting of native willow alder ash and birch to further improve landscape connectivity.
- Control INNS onsite to allow woodland regeneration at the northern boundary.
- 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.
- Proper management procedures must be implemented and in place at all times moving forward.
- Woodland is to be reinstated at the northwest of the site after eradication of INNS.
- Woodland at the south is to be retained.
- Retain all existing woodland.
- Retain all linear boundaries to the site.
- Promote natural wetland at woodland edge
- Avoid operation outside standard hours.
- Reinstate woodland to the northwest of site.
- Remove all INNS

17.3.2 Monitoring

Ongoing monitoring of water quality will continue to be undertaken during the operation of the quarry to ensure that all mitigation measures as set within the rEIAR are being implemented.

17.4 Land, Soils and Geology

17.4.1 Mitigation measures

- A hydrocarbon interceptor is to be installed into the drainage system downstream of the main settlement pond.
- 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.

17.4.2 Monitoring

An inspection of the geological environment and determination of quality of product must be undertaken by a competent Geologist when required by the NSAI. If face heights exceed 20m, or exceeds 30m for those with multiple benches, then a geotechnical assessment must be carried out by a competent geotechnical specialist.

17.5 Water

17.5.1 Mitigation Measures

- Adequate settlement pond capacity to reduce sediment load in the effluent to acceptable levels before discharge off-site

- Construction of a suitable drainage system in place to direct effluent and runoff that may become contaminated with suspended sediment to the settlement pond 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.
- Construction of a monitoring point immediately prior to discharge of effluent off-site.
- Single discharge point subject to the conditions of a trade discharge licence from Donegal County Council.
- Lubricants stored in a bunded area in machinery shed off site.
- A hydrocarbon interceptor is proposed within the main discharge channel immediately before discharge off-site.
- 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.

17.5.2 Monitoring

Monitoring must be undertaken in accordance with the conditions attached to a grant of consent/permission or discharge licence attached to the subject site.

17.6 Air

17.6.1 Mitigation Measures

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

17.6.2 Monitoring

A re-instatement of the dust monitoring points to be implemented if required for ongoing monitoring purposes.

17.7 Noise & Vibration

17.7.1 Mitigation measures

- Acoustic berms of 2.5 to 3m height have been constructed along the extraction boundary of the site where possible.
- The processing plant (saw cutting and guillotining) must be located in the quarry floor area thereby giving maximum barrier attenuation effect
- 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.

17.7.2 Monitoring

It is proposed to carry out noise monitoring at three locations annually (N1, N2 & N3 – specified in Chapter 9, *Noise & Vibration*.). If compliance is met at these three nearest locations then it will be met at locations further away from the site.

17.8 Climate

17.8.1 Mitigation Measures

- 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 and emission levels considered when upgrading new vehicles associated with the site.
- Regular energy audits to be implemented to assess energy requirements and areas where energy usage can be reduced. This will lead to a reduction in greenhouse gas emissions.
- Landscaping plan (Chapter 15, *Landscape & Restoration*) to offset vegetation loss and increase net biodiversity.

17.8.2 Monitoring

- No monitoring is proposed.

17.9 Material Assets

17.9.1 Mitigation Measures

There are no specific mitigation measures implemented or proposed moving forward. Monitoring is proposed in various sections of the rEIAR which will identify any future needs of additional measures to be considered regarding material assets.

17.10 Cultural Heritage

17.10.1 Mitigation Measures

No mitigation is proposed as there are no negative impacts envisioned on local archaeology from the proposed development.

17.11 Landscape & Restoration

17.11.1 Mitigation Measures & Monitoring

- A mature hedgerow has been allowed to develop along the northern boundary of the site.
- An extensive mature wooded area has been allowed to develop along the southern boundary of the site.
- Screening berms have been constructed along the western boundary and allowed to vegetate naturally. Areas of scrub along the western boundary have been allowed to develop.
- Screening berms have been constructed along the eastern boundary
- The screening berms on the eastern boundary must be planted with native wildflower mix to soften their appearance and increase biodiversity.
- The boundary on the west of the quarry must have supplementary planting with a mix of native trees to screen the extraction area and to provide natural vegetation and wildlife corridors of connectivity.

- All planting of trees and shrubs must take place during the first dormant season, avoiding times of frost.
- Planting to be monitored by the Ecological Clerk of Works with appropriate advice and guidance given to the site manager.
- Using plants suited to the given soil type and conditions to reduce the need for expensive and intrusive remedial measures (ex. Replacing failed plants).
- Maintaining and monitoring existing berms that are 2.5-3m in height throughout the subject site to reduce the loss of biodiversity and enhance the conservation value 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 c.2.5 ha excavation area.
- Restoration of the 3.45 ha entire subject site.

17.11.2 Monitoring

It is proposed to carry out monitoring of the planting works and to highlight any replanting that is required due to plant failure. It is proposed that the submitted restoration plan will contain significant ecological monitoring to demonstrate the anticipated benefits.