

4.

DESCRIPTION OF THE PROPOSED DEVELOPMENT

4.1

Introduction

This section of the Environmental Impact Assessment Report (EIAR) provides a description of the site enabling works, construction and operation of the Proposed Development. The chapter also describes the key features of the environmental controls that will be used within the development and the management of site operations. This description sets the basis against which the EIAR has been carried out.

The Proposed Development being applied for under this current planning application includes for the extraction of sand and aggregates over an area of approximately 6.2 ha, washing plant and all other related infrastructure.

4.2

Site Setting

4.2.1

Site Description

The planning application (red line) boundary area measures approximately 6.2 hectares (ha).

Current land-use on the subject site comprises agricultural activities in the form of low input extensive grazing. The Proposed Development site is subdivided by hedgerows, treelines and stone walls. The topography of the site is undulating in nature with ground levels ranging from 84mAOD to 96mAOD. Please refer to Plate 4-1 and 4-2 below for views of the existing site.

The boundaries of the site are comprised of hedgerows, treelines and stone walls. The site is accessed via a gateway which is adjacent to the local L2232 road which runs in a north-south direction parallel to the site's eastern boundary. See Plate 4-1 below.

The site is bounded by agricultural land to the north, west and south. The L2232 road bounds the site to the east and agricultural land lies beyond. The landscape around the Proposed Development site is characterised by one-off housing. Land use in the area is primarily agricultural with some areas of forestry and quarrying operations.

The R328 regional road is located approximately 3.9km to the north and is connected to the site via the L2232 local road. The N83 national road is located approximately 8.1km to the north-west via the R328 and L2232. Access to the R328 is also available to the south at an approximate distance of 6.5km via the L2223.

There are no existing watercourses within the Proposed Development site. The nearest surface water feature to the site is the Dunblaney Stream (EPA Code: 30D34 – Order 1) which is at its closest to the site approximately 605 metres to the east. Levalley Lough is located approximately 2.7km to the south.



Plate 4-1: View of existing site entrance along the local L2232 road looking West from outside the eastern site boundary.



Plate 4-2: View of existing site looking East from the centre of the site within the site boundary.



Map Legend

EIAR Study Area

Site Location

Project Title
Lomaunaghbaun Quarry

Drawn By EK	Checked By TM
Project No. 211034	Drawing No. Figure 4-1
Scale 1:30,000	Date 2023-12-15

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4.3 Proposed Site Development

The Proposed Development being applied for under this current planning application includes for the extraction of sand over an area of approximately 6.2 ha. It is proposed to excavate the site down by an average depth of 3 metres from the existing ground levels which range from 84mAOD to 96mAOD. It should be noted that it is not proposed to extract bedrock at the site. It is proposed to carry out the extraction of the material in three phases which are described in further detail in Section 4.4 below.

The Proposed Development also includes for the following works:

- Installation of processing plant and associated components
- Stockpiling of topsoil removed during quarrying for future implementation of a restoration plan.
- Construction of a refuelling area.
- Installation of site office.
- Installation of a weighbridge and wheelwash.
- Installation of new site entrance along with road reprofiling works.
- Associated works to include installation of groundwater well, upgrade of drainage infrastructure including new fuel/oil interceptor and surface drains on hardstanding.

It is anticipated that the sand quarry will have an operational lifetime of 10 years. Extraction at the site will be at a phased basis as described in Section 4.4.2 below.

4.3.1 Site Infrastructure and Plant

A site office, weighbridge, wheelwash, staff welfare unit and processing plant will also be installed at the site. These components will be located in the south-east corner of the site. The site office, staff welfare unit and many of the components of the processing plant are modular in nature. They will be brought to the site on a flat bed truck prior to being lifted with a crane before being placed in their respective locations.

The Proposed Development will utilise standard infrastructure and plant which are commonly used for such operations. It is proposed to install a processing plant in the south-eastern section of the site, the location and layout of which is outlined in Drawing No. 211034-09 and 211034-10 in the Planning Drawing Pack included in Appendix 4-1. The processing plant will be primarily comprised of the following components.

- Feed Hopper;
- Screen Box;
- Sand Dewatering Unit;
- Deep Cone Thickener/Settlement Tank;
- Silt Buffer Tank;
- Recycled Water Holding Tank;
- Filter Press;
- Crusher;
- Generator, Well, Control Panels;
- Conveyor Belts.

It is anticipated that the following machinery and plant will be utilised at the site:

- 1 no. 35 tonne excavator;
- 1 no. dump truck;

- Loading Shovel;
- Wheel wash/Wash Cleaner
- Fuel Truck;
- Weighbridge
- Water Bowser

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4.4

Description of Proposed Site Operations

4.4.1

Construction Phase and Site Enabling Works

Initial site enabling works for the proposed works at the site will be minimal and will primarily be removal of topsoil and overburden. It is estimated that the site enabling works required will take 2 to 3 months to complete.

The site enabling works will consist of the following:

- Preparation of site for construction.
- Pouring of concrete for refuelling area foundation and foundation for processing plant and associated components.
- Installation of site office and wastewater holding tank
- Construction of new drainage network and fuel/oil interceptor at refuelling area.
- Road paving/improvements; and
- Installation of a weighbridge and wheelwash and site office.

Minor excavations will be required for the installation drainage pipework. It is proposed that excavated soil material along with appropriate overburden material will be reused onsite for the construction of berms which will be installed along the perimeter of the site for screening purposes.

Opening hours are outlined in Section 4.4.2.3.4 below.

The site infrastructure will be installed in the south-eastern section of the site. It is proposed to excavate materials in this area down by approximately 6 metres and then install the site processing plant and associated infrastructure. Materials excavated to allow for these works will be stored within the site and will be processed once the construction phase and site enabling works have been completed.

4.4.1.1

Processing Plant Installation

The components of the proposed processing plant are outlined in Section 4.3 above. The majority of the components listed above are modular in nature. They will be installed on concrete pads within the proposed development site prior to being commissioned. The tanks may be delivered to the site in segments where they will then be assembled prior to connection to the other components of the processing plant.

To allow for the installation of the processing plant and other associated components, minor areas of concrete pads will be installed. A concrete pad which will act as the refuelling area will also be installed. This refuelling area will be impermeable, and any runoff will be captured by new drainage infrastructure including a fuel/oil interceptor. Water leaving the interceptor will flow to the Recycled Water Holding Tank for reuse within the processing and washing of the sand.

It is also proposed to install a weighbridge and wheelwash within the confines of the site. The weighbridge will be modular in nature and will be installed at the site adjacent to the proposed site roads. The wheelwash will be located adjacent to the proposed new entrance to the site. Minor concrete works along with services connections and drainage infrastructure will be required at this location prior to the commissioning of the wheelwash. Water will be supplied to the wheelwash from

the processing plant. All water used for wheelwashing will flow to the fuel/oil interceptor prior to being reused within the processing plant for sand washing.

4.4.1.2 Soil and Overburden Management

Throughout both the construction and operational phases of the Proposed Development, soil and overburden will be excavated to allow for access to the sand and aggregate material. Overburden material will also be generated as part of the sand washing process and this will also be used for the installation of the berms. The quantity of soil and other overburden, requiring management on the site have been calculated, as presented in Table 4-1 below.

Table 4-1 Soil Volumes Requiring Management

Total Site Area	Average Depth of Topsoil	Topsoil Volume (m ³) requiring management
6.2 hectares	0.1 metres	6,250m ³

Soil and appropriate overburden material will be used to construct berms. These berms will be located within the site boundary and adjacent to the perimeter hedgerows. Once all extraction and processing activities have ceased, the topsoil and overburden used for the berms will be levelled off within the site.

4.4.1.3 Road Reprofilng Works

The proposed new entrance will allow access to the proposed development site. There is an existing entrance and the proposal is to move the new entrance approximately 30m to the north of the existing field entrance. As part of the works, the local road is to be lowered either side of the new entrance to ensure forward sight visibility of 90m is achieved. The existing road is to be lowered by a maximum of 600mm to lower an existing hump in the road. As a result, the proposed pavement upgrade will result in the new road pavement being placed directly on the existing subgrade material. This is outlined in Drawing 211034-17 of the Planning Permission Application Drawings Pack submitted with this application. These reprofiling works will only be carried out once consent has been given from Galway County Council and any other relevant parties. Hedgerow maintenance in the form of trimming will also be carried out to allow for the required sightlines.

4.4.2 Operational Phase

The activities proposed to be carried out during the operational phase are described below.

4.4.2.1 Sand Extraction

Once the overburden has been removed, the sand material will be extracted using a tracked excavator. The material will be transferred to the processing plant using a dump truck and fed directly into the feed hopper.

Material will be extracted at the site in three phases with all material being removed from each phase before extraction begins in the next phase. Extraction phasing is outlined in Drawing 211034-09 of the Planning Drawing Pack submitted with this application.

The site will be worked in 3 no. phases as described below:

- Phase 1: The first phase of extraction will extend to an average excavation depth of 2.8m and will allow for the extraction of circa 47,000m³ of material.

- Phase 2: The second phase will extend to an average excavation depth of 3.3m and will allow for the extraction of circa 53,000m³ of material.
- Phase 3: The third phase of extraction will extend to an average excavation depth of 1.7m and will allow for the extraction of circa 52,000m³ of material.

Excavation will initially take place in the south-eastern corner of the site where the processing plant will be installed. Materials will be excavated and stored within the Phase 1 area to allow for the installation of the processing plant. Once the processing plant has been installed, the excavated material from Phase 1 will be processed for supply by the processing plant. Once the materials have been excavated from the Phase 1 area, excavation of Phase 2 will begin. The Phase 2 area will be reinstated prior to extraction of Phase 3. Reinstatement works will comprise hedgerow planting to replace loss of hedgerow during the extraction works along with site levelling and reseeded. The total excavation volume of sand and aggregate material at the site is calculated to be 154,000m³.

The plant will produce mortar and plaster sand which will be stockpiled within Phase 1 area prior to sale and distribution. The overall site will have an average excavation depth of 3 metres.

4.4.2.2 Sand Processing and Washing

In order to achieve a high-quality end product, the excavated sand will be washed within the processing plant. The processing plant will be located in the south-east corner of the site as shown in Drawing No. 211034-09 and 211034-10 of the Planning Drawing Pack included in Appendix 4-1. The processing plant will be modular in design and the majority of the components will be transported to the site on the back of a truck before being lifted off by a crane. Excavated material will be fed into the feed hopper. This material will then travel along a conveyor belt to the screen box. Here, water will be introduced to aid in screening and washing. Any material larger than 3mm will be screened out and transported via a conveyor belt to a crusher unit, which will reduce material to the appropriate size prior to being reintroduced back to the screen box. Material smaller than 3mm will be washed down through the screen box to the sand dewatering unit. Here, water will be separated from the sand by means of a centrifuge. Clean washed sand will pass out an outlet chute for storage and sale and the separated water will flow to a settlement tank for further treatment.

4.4.2.3 Water Management

Water usage for the washing element of the sand processing plant during the operational phase will be within a closed loop system. All water used for washing will be recycled back through the plant and reused on a continuous basis. Initially, water will be extracted from the proposed on-site groundwater well and pumped to the recycled water holding tank. It is estimated that the initial volume of water to be extracted from the groundwater well will be 220m³. The tank will not be filled to the top to allow capacity for ingress of rainwater etc. It should be noted that during the initial filling of the recycled water holding tank, extraction rates from the groundwater well will not exceed 25m³ per day.

Once the recycled water holding tank has been filled to the appropriate level, water will be pumped to the screen box to be used to wash the sand on an as needed basis. Water separated from the sand in the sand dewatering unit will flow to a deep cone thickener where coagulant will be added to aid settlement of silt out of the water column. Silt suspended within the water column would then flow out the bottom of the deep cone thickener to the silt buffer tank before flowing to the filter press for final processing. The silt material produced as a result of the sand washing process will be stored on-site to be used for site reinstatement or sold for use as aggregate material.

Water separated from the silt in the deep cone thickener will then flow to the recycled water holding tank to be reused for screening as required.

As all water will be reused on a continuous basis within the material processing plant there will be no requirement for the installation of settlement ponds within the site as is the commonly the case with many other sand extraction sites.

Water which will be used for dust suppression and at the wheel wash will be sourced from the proposed recycled water holding tank. Wastewater from the wheelwash will flow via new drainage infrastructure to a fuel /oil interceptor before flowing back to the recycled water holding tank.

Due to the closed loop nature of water use at the proposed site, it is not anticipated that water extraction volumes will require a water abstraction license, as outlined in the recently issued Water Environment (Abstractions and Associated Impoundments) Act. However, if water use does exceed thresholds outlined in the bill, then the appropriate water abstraction license will be obtained. This is further outlined in Chapter 8 of this EIAR.

All site refuelling will be carried out in a designated refuelling area within the confines of the site boundary. The refuelling area will be located upon an area of concrete hardstanding which will be installed during the construction phase as part of site enabling works. Appropriate falls will be in the hardstanding area so as to direct any fugitive fuel spills to the fuel/oil interceptor which will be installed adjacent to the refuelling area. From here, water will flow back to the recycled water holding tank for reuse within the processing plant. It should be noted that there are no existing drains or watercourses located within the confines of the site or even in close proximity to the site's boundary.

4.4.3 Management of Site Operations

4.4.3.1 Facility Management and Staffing

It is anticipated that a total of 3-4 no. full time staff will be employed at the site during the operational phase. These personnel would comprise a number of roles including but not limited to, management, administration, general operatives, drivers and maintenance staff.

All personnel employed on the site will be adequately trained in their own personal discipline and will be familiar with the operating conditions relating to the proposed site. The general manager will have overall responsibility for the extraction.

Newtown Farming Ltd will continually assess the training needs of all involved in the operation of the quarry and carry out such training as required by regulation. Records of staff training will be regularly updated and stored securely on site.

The site will be designed and will be managed in accordance with Environmental Management Guidelines: Environmental Management in the Extractive Industry (Non-Scheduled Minerals)' (EPA, 2006)

Mitigation measures will be implemented at the site and will be under continuous review during the proposed operational phase with regard to their performance and effectiveness against the limits set out in the Department of the Environment Heritage & Local Government, Quarries and Ancillary Activities – Guidelines for Planning Authorities (April 2004) and the EPA Environmental Management Guidelines Environmental Management in the Extractive Industry (Non-Scheduled Minerals) (2006). New environmental control technologies and established industry best practice worldwide are regularly evaluated by Newtown farming Ltd.

4.4.3.2 Site Access and Security

The site will be accessed via a new entrance which will be located adjacent to the L2232 local road along the site's eastern boundary. The L2232 links to the R328 regional road approximately 3.9km to the north and to the R328 via the L2223 approximately 6.4km to the south-east. As outlined in detail in

Appendix 13-1 and Chapter 13 of the EIAR, traffic accessing and egressing the site will use Route B only. Route A as outlined in Section 13 of the EIAR will only be used subject to improvement works and the provision of the necessary passing opportunities. This outlined further in Chapter 13 of the EIAR and in the Traffic and Transport Assessment (TTA) included in Appendix 13-1.

All traffic accessing and egressing the site will utilise the new commercial entrance which will be located at the eastern boundary of the site. All vehicular traffic accessing the site will be controlled by a security barrier at the site office before gaining access to the working area of the site.

The sites existing boundaries are currently comprised of hedgerows, treelines and stone walls. These will be retained during the operational phase of the Proposed Development. Prior to works taking place at the site, the site will be secured by the installation of secure fencing to prevent unauthorised access. The site gates will be locked and secured outside operating hours. Warning signs will be placed and maintained at the site entrance and at regular intervals on the perimeter fencing.

In order to allow for the necessary sightlines at the new site entrance, it is proposed to carry out road reprofiling works on the section of road adjacent to the location of the new site entrance. The section of road that will be reprofiled is approximately 41m in length. It is proposed to reduce the height of the road in this location by approximately 0.6m. Hedgerow maintenance in the form of trimming will also be carried out periodically. It should be noted that hedgerows will not be altered or trimmed during the closed season which extends from the 1st of March to the 31st of August.

4.4.3.3 Traffic Control and Transport Routes

All traffic accessing and egressing the site will utilise the new site entrance and established haul routes. Traffic on site will be controlled by the Site Manager. Signs on site will indicate maximum permissible speeds and directional information. The Site Manager will provide the primary means of marshalling traffic. Traffic control at the site will involve restricting the number of vehicles entering at any one time. No queuing of vehicles will be allowed outside the entrance to the quarry on the L2232.

It is proposed to use Route B as outlined in Section 13 of the EIAR as the primary access and egress route to the site. Access to the site is also available via the L2232 to Gorteen Cross to the north (Route A as outlined in Section 13 of the EIAR), however this route will only be used subject to improvement works and the provision of the necessary passing opportunities. Details are further outlined in Chapter 13 and in the Traffic and Transport Assessment (TTA) which appended in Appendix 13-1.

The following mitigation measures will be employed at the site during its operation, to ensure traffic associated with the development does not impact negatively on the environment:

- Adequate on-site parking is provided for employees and visitors cars;
- Provision of on site-speed restrictions;
- Routing of vehicles with sensitive regard to local communities;
- Ensuring that HGV are not overloaded;
- Ensuring that all loads leaving the site are trimmed; and
- Checking public roads in the vicinity of the site for signs of spillages.

4.4.3.4 Opening Hours

It is expected that the quarry extraction works will occur during the following working hours:

- 07:00 – 18:00 Monday to Saturday
- Closed Sunday, Bank Holiday and other Public Holidays.

4.4.3.5 Services

The arrangements for services to the Proposed Development site are described below:

- The site will be serviced by new connections to electrical mains and telecommunications supplies.
- Drinking water will be provided to the site via water dispensers which will be provided by an appropriately licensed vendor.

Sanitary wastewater generated during the site's operation will be contained within a storage receptacle which will be built within the staff welfare facility. This storage receptacle will be emptied on a regular basis or as needed by the appropriately licensed waste disposal company.

4.4.3.6 Fuel and Chemical Storage

All site refuelling will be carried out in a designated refuelling area in the south-eastern section of the site, within the confines of the site boundary. This designated area will be marked by signage. The refuelling area will be comprised of concrete hardstanding. Appropriate falls will be in the hardstanding area so as to direct any fugitive fuel spills to the fuel/oil interceptor which will be installed adjacent to the refuelling area. Water leaving the interceptor will then flow back to the recycled water holding tank for reuse within the processing plant. It should be noted that there are no existing drains or watercourses located within the confines of the site or even in close proximity to the site's boundary. The closest mapped watercourse is the Dunblaney Stream (EPA Code 30D34 – Order 1) which is located approximately 605m to the north-east of the proposed site.

All plant and machinery will be serviced before being mobilised to site, and regular leak inspections will be completed during the site operations. No plant maintenance will be completed on site, any broken-down plant will be removed from site to be fixed. An emergency spill kit with oil boom, absorbers etc. will be kept on-site for use in the event of an accidental spill. Drip-trays will be used for fixed or mobile plant such as pumps and generators in order to retain oil leaks and spills. The drip tray will have a holding capacity of 110% of the volume contained within the machine/ generator. Only designated trained and competent operatives will be authorised to refuel plant.

Chemicals such as coagulant for the water treatment element of the Proposed Development will be stored on an area of hardstanding in the south-eastern section of the site and will be covered. This area will be appropriately bunded to ensure that any potential leaks or runoff is captured.

4.4.3.7 Water Supply

Water used for drinking will be provided at the site via water dispensers which will be delivered by an appropriately licensed vendor on an as needed basis. Water which will be used for washing sand will be sourced from the proposed borehole which will be installed within the confines of the site. It should be noted that water will only be extracted from the borehole for the initial start-up of the processing plant and on an as needed basis for topping up to account for water losses from evaporation etc. As it is proposed to reuse water within the processing plant on a continuous loop there will be no requirement for continuous extraction of water from the borehole. Water which may be used for the suppression of dust or the wheelwash will be sourced from the recycled water holding tank. It is not anticipated that significant volumes of water will be extracted from this tank for use in dust suppression or the wheelwash.

4.4.3.7.1 Wheelwash/ Wheel Cleaner

It is proposed to install a self-contained wheel wash facility within the confines of the Proposed Development site. This will mitigate against the potential of mud or dirt being tracked on to public roads. The wheel cleaning system will be located close to the site entrance/exit within the confines of

the site boundary on a paved section of the access road. In addition, a road sweeper will be available for the public roads if required.

4.4.3.8 Resource Use and Energy Efficiency

Water supply for the processing plant will be sourced from the proposed on-site groundwater borehole which will be installed in the south-eastern section of the site. Water which will be used in the processing plant will be kept in a closed loop system whereby it will be recirculated back through the processing plant continuously. This will lead to limited volumes of water being used at the site and allow for water conservation.

Electricity to the plant and associated infrastructure will be supplied by ESB or another provider via the existing electricity network. The Proposed Development will result in energy consumption (electricity) associated with the processing plant and equipment. However, given the proposed infrastructure at the site, the impact will be negligible. Notwithstanding this, energy awareness notices will be posted around the site to ensure employees are aware of the need to conserve energy. Energy efficiencies will be achieved by using modern plant and equipment and servicing that equipment on a scheduled basis. Plant and equipment not in use will be shut off.

Diesel, hydraulic oil and engine oil will be used to operate diesel powered plant on site. The following fuel efficiency measures will be implemented at the site:

- All on-site plant and vehicles will be maintained in good operational order, thereby minimising any emissions that arise.
- Fixed plant will be turned off when not in use.
- When stationary, delivery and on-site vehicles will be required to turn off engines.
- Users of the site will be required to ensure that all plant and vehicles are suitably maintained to ensure that emissions of engine generated pollutants is kept to a minimum.
- Training in the efficient use of equipment and plant.

4.4.4 Site Reinstatement and Decommissioning Phase

Once quarry operations have ceased within the proposed extraction area, all site infrastructure including the processing plant, wheelwash, weighbridge and site office would be disassembled/demolished and removed off-site for disposal/recycling and /or sale unless a new permission is granted which would allow for the retention of these components on-site.

All material intended for off-site disposal will be transported and disposed in accordance with the Waste Management Act 1996 and Environmental Protection Agency Act, 1992. The site will be levelled, reseeded and then returned to grassland for agricultural use.

The Phase 1 area along with the processing plant will be the last sections of the site to be reinstated. It is proposed to reinstate the Phase 2 and Phase 3 extraction area once all materials in these areas have been extracted. Reinstatement will consist of levelling of extracted topsoil and overburden and replanting of hedgerows. Appropriate batters will be allowed to ensure aesthetically pleasing and gentle slopes into the relevelled site from the existing perimeter.

As the Proposed Development will be completed over three phases, there is opportunity for site reinstatement during the lifespan of the quarry. Phase 1 of the Proposed Development will include the erection of processing plant, wheel washes, and site offices, and will remain until the quarry is decommissioned. Phase 2 will include the first extraction activities within the site and will first require the scraping of topsoil and removal of hedgerows to expose the sands below. The scraped topsoil will be stored as berms on the perimeter of the EIAR Site Boundary, as shown in the site restoration drawings in the planning pack of this application.

Excluding Phase 1 (site enabling), on completion of a phase and prior to the commencement of the next, the topsoil removed to facilitate extraction will be respread over the worked area. This will ensure that the same seed mix is used during reinstatement and is of local provenance. In addition, the proposed hedgerow planting proposed for a phased area will be undertaken prior to the commencement of the next phase.

The reseeded fields will then be subject to grassland management to ensure that the current habitat types are restored. This will involve annual removal of the sward, either by grazing (preferably by sheep) or hay harvest and ceasing any application of fertiliser or chemicals onto the fields.

Provided that the above is carried out and with time, this reinstatement of the site will result in the reestablishment of dry calcareous neutral grassland, in addition to the 5.5 ha managed off site during operation. In addition, as per the site reinstatement drawings, there will approximately 830m of hedgerow planted within the boundary of the site, negating the loss of this habitat with added compensation of approximately 17%. This is further outlined in Section 6.7.4 of Chapter 6 of the EIAR.

The Site Restoration Plan is described in detail in Appendix 11-1 and outlined in the Planning Permission Application Drawings Pack which accompanies this application.

4.4.5 Health and Safety

Health and Safety will be a priority on site at all times and will be undertaken in accordance with Health and Safety procedures. The operator of the site shall at all times take such precautions as are necessary to protect the health and safety of its own employees, other employees and all other persons including members of the public, and shall comply with the requirements of the Safety, Health and Welfare at Work Act 2005 (as amended).

4.5 Environmental Controls

4.5.1 Dust Control

The following dust control measures will be implemented at the site during the operational phase:

- The hardstanding/roads adjacent the site will continue to be regularly inspected by the Site Manager for cleanliness and cleaned as necessary.
- Water spraying of conveyors and stockpiles will be carried out when necessary to reduce the likelihood of dust particles becoming airborne and becoming a nuisance.
- Any hardstanding areas/site roads with the potential to give rise to dust will be regularly watered, as appropriate, during dry and/or windy conditions.
- Water bowser movements will be carefully monitored, as the application of excessive volumes of water may lead to increased runoff.
- The transport of material, which has significant potential to cause dust, will be undertaken in tarpaulin-covered vehicles.
- All plant and machinery will be maintained in good operational order while onsite.

Dust monitoring will be conducted using Bergerhoff Gauges. It is proposed to install two dust gauges at the site. One of these will be located at the western boundary of the site and the other will be installed at the eastern boundary adjacent to the L2232 road. At the end of each month, the collection container shall be taken for analysis by an appropriately certified laboratory in order to determine the rate of dust deposition. The locations of these dust gauges is outlined in Figure 9-1 in Chapter 9.

An assessment of potential dust emissions from the site is detailed further in Chapter 9 of this EIAR.

4.5.1.1 Dust Suppression

In periods of extended dry weather, dust suppression may be necessary in operational areas and along access roads to ensure dust does not cause a nuisance. If necessary, a water bowser will be used to dampen down haul roads and site compounds to prevent the generation of dust. Water bowser movements will be carefully monitored as outlined in Section 4.5.1 above.

4.5.2 Noise Control

The calculated noise levels at the nearest noise-sensitive locations to Proposed Development site do not exceed the recommended operational criterion adopted for the site. Notwithstanding this, best practice noise mitigation measures will form part of site management practices to ensure noise from on-site operations do not cause a noise nuisance at the nearest Noise Sensitive Receptors (NSR), the following measures are recommended:

- Plant used on-site will be maintained in accordance with manufacturer specifications. In particular, exhaust silencers will be maintained in a satisfactory condition.
- Communication through plant horns will be prohibited.
- Unnecessary revving of truck engines will be prohibited.
- Site haul roads will be maintained in a satisfactory condition, and free from surface defects that may generate rattles in empty truck bodies.
- Machinery not in active use will be shut down.

4.5.3 Invasive Species

No invasive species listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations (S.I. 477 of 2011) were recorded within or adjacent to the proposed development site. However, the following measures are proposed to avoid potential impacts associated with the introduction and spread of invasive alien plant species:

- Good construction site hygiene will be employed to prevent the introduction and spread of problematic invasive alien plant species (e.g. Himalayan Balsam, Japanese Knotweed etc.) by thoroughly washing vehicles prior to leaving any site.
- All plant and equipment employed on the construction site (e.g. excavator, footwear, etc.) will be thoroughly cleaned down using a power washer unit prior to arrival on site to prevent the spread of invasive plant species. Wheel washing facilities will be provided at the site entrance. All washing must be undertaken in areas with no potential to result in the spread of invasive species;
- All material used for site reinstatement will be material from the site set aside during initial excavation.
- Should any invasive alien species be introduced to site, these shall be dealt with in accordance with guidelines issued by Transport Infrastructure Ireland (TII), formerly the National Roads Authority (NRA), titled, The Management of Noxious Weeds and Non-native Invasive Plant Species on National Roads (NRA 2010).

4.5.4 Environmental Management Plan

A detailed Environmental Management Plan (EMP) has been prepared and is attached in Appendix 4-2.

The EMP will define the water management, traffic management and parking arrangements and the environmental protection measures to ensure there are no significant effects on the environment from the construction and operational phases of the Proposed Development as outlined throughout the EIAR.