Panther Environmental Solutions Ltd
Units 3 & 4, Innovation Centre
Institute of Technology
Green Road, Carlow
Ireland
R93 W248

Telephone: 059-9134222
Email: info@pantherwms.com
Website: www.pantherwms.com

ENVIRONMENTAL MANAGEMENT PLAN

ROCKMILLS LIMESTONE QUARRY

CARRIGDOWNANE UPPER, ROCKMILLS, KILLDORRERY, CO. CORK

2023

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Author/s:	Martin O'Looney, BSc.			
Reviewed:	Mike Fraher, BSc.			

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1.0 INTRODUCTION

1.1 PURPOSE/SCOPE

The purpose of the Environmental Management Plan is to outline the measures implemented at the site to prevent, monitor and mitigate potential environmental impacts from the operation of the limestone quarry activity.

2.0 UPDATE AND REVIEW PROCEDURES:

The operations manual should be reviewed and updated as necessary at least annually.

Otherwise, the operations manual should be reviewed and updated following:

- Any new planning permission or other authorisation,
- The implementation of any relevant process change,
- The installation of any relevant new equipment,
- On foot of site audit or complaint issues.

3.0 COMPANY INFORMATION

The existing Rockmills Quarries Limited activity is located at Carrigdownane Upper, Rockmills, Killdorrery, Co. Cork, P67 YC99. The approximate Irish National Grid (ING) reference for the site is E: 172106, N: 106599.

The hours of operation of the quarry are 07:30 hrs to 18:00 hrs, Monday to Friday and 07:30 hrs to 16:00 hrs on Saturdays.

Between 2008 and 2014 minor quarrying operations were undertaken at the Carrigdownane Upper site, within a small unauthorised pit, for use on the applicants farm and an adjacent business under the same owners. Prior to this, the land was used as pasture for grazing cattle.

In 2014, the applicant began the process of gaining retention for the previous extraction activities and gaining planning permission for the extension and development of the site to a formal quarrying operation. Planning permission was received in December 2015.

In 2016 planning permission was received for the installation of offices, car parking and sanitary services.

In 2021 planning permission was received for the retention of a new service yard and lime crushing and storage facilities.

It is intended to apply for planning permission in 2023 for requesting a 10 year planning permission for continuation of an existing quarrying operation, a 4.21 hectare extension (3.84ha extraction area) and all ancillary site works in the townland of Carrigdownane Upper, Co. Cork.

3.1 ROCKMILLS QUARRY MANAGEMENT AND RESPONSIBILITY

The responsibility for the implementation, maintenance and review of the Environmental Management Plan lies with the Quarry Owner / Manager.

The Quarry Owner / Manager is responsible for the training of relevant personnel in the Environmental Management Plan.

The responsibility for the actioning of environmental management measures lies with the designated Site Environmental Officer. The Site Environmental Officer would be responsible for the maintenance of all environmental monitoring or mitigation equipment on site.

3.2 DESCRIPTION OF OPERATIONS

The extraction operation is carried out as follows:

1. Overburden is stripped as required ahead of the working face of the quarry using a tracked excavator. The depth of overburden encountered thus far is a maximum of c.500mm, consisting mainly of topsoil material. Those soils which have not been used in the erection of boundary earth berms are stockpiled onsite for eventual reinstatement. Earth berms have been planted to promote rapid stabilisation of soils.

2. Limestone is extracted from the working face using controlled blasting.

   Blasting is carried out by a contracted blasting expert approximately every 3-4 months based on demand. Charge holes are drilled into the rockface over 1-2 days, whereupon charges are placed and detonated in-series to deposit rock onto the active quarry floor. Charge type and sizes are selected by the blasting expert to environmental and health and safety criteria.

3. Oversized blasted stone is broken further using a tracked excavator mounted with a hydraulic rock breaker.

4. Broken stone is processed further using a mobile crushing machine. Crushed stone is transferred via the output conveyor to a mobile screening machine which separates the crushed stone into the required grades.

5. Graded stone is stockpiled within the quarry pit floor and service yard. Stone products include stone, chips, blinding and clause 804 aggregates.

Stone is provided to customers for agricultural use, building development and road construction projects as requested.

Approximately 20,000 tonnes per annum of the extracted stone undergoes further processing to produce agricultural lime. Processing to agricultural lime consists of:

a) Crushed limestone is loaded into the milling machine hopper using a wheeled front loader.

b) Stone from the hopper is transferred via conveyor to the enclosed milling machine to convert the stone into agricultural lime. The lime mill has been fitted with a dust filtration system.

c) The agricultural lime is transferred via conveyor into an enclosed lime output shed.

d) Lime is moved via front loader and stockpiled within roofed storage shed.

e) Lime is loaded onto lorries using a front loader within the lime yard. A water sprinkler at the wheel wash area is used to dampen the lime for transport (prevent dust).

Aggregate washing is not carried out at the site, however, 804 fill material is sprinkled with water to improve its bonding capabilities under heavy loading (for use on roads, drive ways etc.).

There is no dewatering required onsite, as all extraction takes place at least 1 metre above the water table (maximum recorded groundwater level of 62.93 m AOD @ GW2 in January 2021).

Truck weighing is carried out at the weighbridge and recorded at the weighbridge offices.

Services

There is no general stormwater pipework or management system at the site. There is no discharge to surface-water from the quarry. All rain that falls within the footprint of the quarry infiltrates into the services area floor or the quarry floor and migrates vertically down to the water table.

The re-fuelling area is paved, with all drainage directed to an oil-water interceptor. The oil-water interceptor is cleaned and inspected regularly. The oil-water inceptor discharges to a soakaway. Vehicle diesel is stored in three double-skinned Carbery Plastics 6m^3 tanks, stored on a concrete plinth draining to the interceptor.

There is no connection to the mains water supply for the quarry activity. All water for the site is sourced from groundwater wells, GW 1 and GW2. Water is stored in a single 30 m^3 stainless steel buffer tank. There is no water treatment carried out at the site, but wells undergo regular testing. GW1 is the primary groundwater supply, while GW2 provides back up supply. Water is used for dust suppression, 806 grade fill wetting, quarry office drinking water and quarry office toilets.

The quarry office toilets discharge to a settlement tank located within the service area boundary, east of the office and south of the diesel generator. The tank contents are regularly pumped out and removed by a licenced operator to a licenced facility.

There is no mains connection to the electrical grid for site operations. Electricity for the quarry office and lime production is supplied from an onsite 200kW diesel generator. The generator is fuelled from an adjacent 1,000 litre double skinned steel diesel tank.

Existing Mitigation Infrastructure

Planting for dust and visual mitigation has been carried out. A double line of hawthorn whips has been planted at 1m spacing, however, this will not become fully effective until planting has become fully grown. Planting has occurred on the external bunds and existing hedgerow (blackthorn, elder, wild rose and mature ash) along the eastern boundary of the service yard / stockpile area.

Stone crushing and screening is carried out on the pit floor in order to avail of the noise and dust mitigation provided by the quarry walls. Stone stockpiles are also stored within the quarry floor in so far as is possible. Water sprinklers are in place for stockpiles in order to provide for additional dust suppression when required.

The lime mill has been installed with a dust filter and has been enclosed.

A concrete 4m wide access road from the main road to the weighbridge has been constructed, providing lower potential dust generation from unsurfaced trackways. Roads are wetted during dry conditions in order to aid in dust suppression via a water bowser.

A wheel wash is in place and provides for a minimum of one wheel revolution. All trucks are required to use the wheel wash when exiting the site.

Loads containing fines (i.e. agricultural lime) are required to be covered when existing the site. A water sprinkling system has been installed at the wheel wash station for loads of agricultural lime.

Internal and public roads are swept when required (road sweeping / street cleaner).

An area of previously over-excavated ground within the existing quarry has been restored with new material to 64m O.D. in agreement with the county council. The area is surrounded by a gravel bund wall, to ensure no ingress of surface-water from the active quarry area.

4.0 MONITORING PROCEDURES:

4.1 GENERAL MONITORING

Environmental site checks should be carried out at least weekly.

Environmental checks should include the following items / areas:

- Site yards and roads,
- All equipment and vehicles,
- Waste and Chemical storage areas,
- Site boundaries,

Checklists should be compiled for any relevant repeated maintenance / mitigation checks.

A weekly checksheet in included in **Appendix E.**

4.2 PLANNING COMPLIANCE MONITORING

4.2.1 Monitoring Locations

Monitoring locations are mapped in **Appendix A.**

4.2.2 Monitoring & Frequency

Environmental Management at the site is carried out in compliance with legal requirements and under the conditions of previous planning applications 15/5484 and 21/5792.

Environmental Aspect	Monitoring Frequency	Notes
Groundwater	Quarterly*	
Depositional Dust	Quarterly*	
Environmental Noise	Quarterly*	
Blast Noise & Vibration	All blasting events	May not exceed 1 blast per month

**Operator may propose amendment to monitoring frequency at 2 years from planning 15/5484 commencement (02nd December 2015), subject to appropriate compliance monitoring record.*

Planning permission 15/5484 requires an **Environmental Monitoring Report** be submitted to Cork County Council **quarterly** (to be reported 1 month before the end of next quarter). The report is required to identify all non-compliances and detail corrective measures to ensure future compliance.

4.2.3 Groundwater Monitoring Location & Limits

Groundwater monitoring wells onsite are as follows:

Location Reference	Grid Reference (ING)
GW1	E 172233,N 106579
GW2	E 172045, N 106678

Groundwater is required to be monitored as per Planning Ref 15/5484 Clarification of Further Information Letter, dated 05th November 2015, Attachment 2:

Parameter	Limit	Unit	Guidance Level (receptor)
pH	No significant change		
Conductivity	No significant change	µS/cm	1875 (human)
Turbidity	No significant change		
Total Ammonia (NH_3)	No significant change		
Ammonium	No significant change	mg/l as N	<0.065 (surface-water) <0.175 (human)
Orthophosphate	No significant change	mg/l as P	<0.035 (surface-water)
Nitrite	No significant change	mg/l as NO_2	<0.375 (human)
Nitrate (as NO_3)	No significant change	mg/l as NO_3	37.5 (human)
Sulphate	No significant change	mg/l as SO_4	187.5 (human)
Chloride	No significant change	mg/l as Cl	187.5 (human)
Alkalinity	No significant change		
Sodium	No significant change	mg/l as Na	150 (human)
Potassium	No significant change		
Calcium (Ca)	No significant change		
Magnesium (Mg)	No significant change		
Diesel Range Organics (DRO)	No significant change		
Mineral Oils (MO)	No significant change		
Total Petroleum Hydrocarbons (TPH)	No significant change		
Oils, Fats & Greases	No significant change		

The following are the recommended groundwater monitoring parameters as per the 2023 EIAR (Chapter 9) – biannual monitoring:

Parameter	Limit	Unit	Guidance Level (receptor)
Total Ammonia (NH_3)	No significant change	mg/l as N	<0.065 (surface-water) <0.175 (human)
Orthophosphate	No significant change	mg/l as P	<0.035 (surface-water)
Nitrite	No significant change	mg/l as NO_2	<0.375 (human)
Nitrate (as NO_3)	No significant change	mg/l as NO_3	37.5 (human)
Chloride	No significant change	mg/l as Cl	187.5 (human)
Sodium	No significant change	mg/l as Na	150 (human)
Potassium	No significant change		
Mineral Oils (MO)	No significant change		
Total Petroleum Hydrocarbons (TPH)	No significant change		
Total Coliforms			
Faecal Coliforms			

4.2.4 Noise Monitoring Location & Limits

The currently agreed noise monitoring locations are as follows:

Location Reference	Grid Reference (ING)
N1	E 171911, N 107306
N2	E 172327, N 107632
N3	E 172601, N 106753

The environmental noise limits for the Rockmills Quarries are as follows:

Noise Limit (monitoring duration)	Applicable period
L_{Aeq} 55dBA (30 minutes)	Quarry operating hours (07:30hrs – 18:00hrs Mon-Fri) (07:30hrs-16:00hrs Saturday)
L_{Aeq} 45 dBA (15 minutes)	Any other time

4.2.5 Blast Noise & Vibration Monitoring Location & Limits

Each blasting event is required to be monitored at the boundary of the quarry.

Location Reference	Grid Reference (ING)
B1	E 172211, N 106571

Blasting operations are limited to within the hours of 09:00 hrs to 18:00 hrs Monday to Friday, excluding public holidays, bank holidays and weekends.

Vibration Limit Peak Particle Velocity (PPV)	Noise Limit Air Over-pressure Limit
12 mm/s	125dB

4.2.6 Depositional Dust Monitoring Location & Limits

The currently agreed depositional dust monitoring locations are as follows:

Location Reference	Grid Reference (ING)
D1	E 171820, N 106662
D2	E 172314, N 106726

The depositional dust limits for the Rockmills Quarries are as follows:

Depositional Dust Limit	Sample Collection Period
350 mg/m^2/day	30 days

Additional mitigation / dust suppression measures shall be implemented should the dust deposition exceed the limit.

5.0 WASTE MANAGEMENT

5.1.1 General

Wastes arising from the quarrying operations are primarily associated with the following areas / activities:

- Office Waste,
- Canteen Waste,
- Vehicle Maintenance Waste,
- Oil Interceptor Waste,
- Septic Tank Waste.

Office / canteen / house type general waste and recycling wastes are generated at the site.

Minor vehicle maintenance is carried out at the site, including topping up engine oil and lubricating machine parts. This generates contaminated waste containers.

The refuelling area is serviced by a hydrocarbon interceptor. The interceptor should be checked annually and emptied as required.

Quarry office toilets discharge to a settlement tank. The tank should be checked quarterly and emptied as required.

5.1.2 Inventory of Wastes

Waste type	Type	LoW code
Mixed Municipal Waste	Waste	20 03 01
Paper and Cardboard Packaging	Recycling	20 01 01
Glass	Recycling	20 01 02
Metals	Recycling	20 01 40
Waste Lubricating Oils	Haz Waste	13 01 13* 13 02 08*
Waste Containers contaminated with Oil / Lubricant	Haz Waste	16 07 08*
Surface-water Interceptor Sludges	Haz Waste	13 05 03*
Septic Tank Sludges	Waste	20 03 04
Fluorescent tubes and other mercury-containing waste	Haz Waste	20 01 21*
Batteries and accumulators	Haz Waste	20 01 33*
WEEE	Haz Waste	20 01 35*

5.1.3 Responsibility of the Waste Holder & Record Keeping

The EC Waste Directive Regulations (S.I. No. 126 of 2011), which enact the Waste Management Act, detail the responsibilities of the holder of a waste. The main provisions which apply to the site are as follows;

- Ensure that waste contractors hold a valid waste collection permit.
- Obtain a copy of their waste collection permit.
- Check that each waste contractor is permitted to carry the waste concerned from your Local Authority (EWC – European Waste Catalogue, renamed LoW – List of Waste, codes for healthcare risk waste and non risk waste should be stated on the waste collection permit).
- Check that the vehicle registration used to carry waste is listed on waste collection permit.
- Ensure that all appropriate documentation, Waste Transfer Form (WTF), is completed before a hazardous or risk waste leaves site.
- Ensure your waste is being taken to an appropriately licensed facility for processing i.e. processing/treatment facility or landfill.

All waste documentation relating to the collection and disposal of wastes should be retained onsite for up to 5 years.

Current collection permits, and covered LOW Codes, for companies can be viewed on the National Waste Collection Permit Office website: http://www.nwcpo.ie/default.aspx

Smaller scale waste destinations can be found on the Local Authority Waste Facility Register: http://facilityregister.nwcpo.ie/

Waste facilities licenced by the EPA can be found on the EPA website:

IPC/IE licence:
https://epawebapp.epa.ie/terminalfour/ippc/index.jsp?disclaimer=yes&Submit=Continue

Waste licence:
https://epawebapp.epa.ie/terminalfour/waste/index.jsp?disclaimer=yes&Submit=Continue

UWWTP licence:
https://epawebapp.epa.ie/terminalfour/wwda/index.jsp?disclaimer=yes&Submit=Continue

An inventory of Waste Service Providers used by the site are provided in **Appendix B**.

The record form for waste transport from the site is provided in **Appendix C**.

6.0 PROCEDURES

Environmental mitigation measures at the site are managed such to reduce potential adverse impacts on the environment from potential emissions from the site. The following sections provide general principals and procedures to ensure good environmental practice at the site.

The Environmental Action Plan is included in **Appendix D**.

6.1 OVERBURDEN REMOVAL ACTIVITIES

The works would occur on a phased basis over the lifetime of the sites planning permissions.

The removal of overburden would occur in sections as the extraction area expands.

The initial overburden removal activities would be used to establish earth berms at the boundaries of the proposed extraction area. Excess overburden would be deposited with the existing overburden stockpile within the quarry floor.

The southern and western boundary of the proposed 2023 quarry extension is the townland boundary between Carrigdownane Upper and Lisnagoornee. It is thought that the locations of some boundaries have their origins in prehistory. Others have their origins in the early medieval period. This may have archaeological and cultural heritage significance, and these sites can be common for the deposition of votive offerings.

Potential impact topics/receptors:

- Health & Safety,
- Dust,
- Visual & Landscape,
- Water,
- Cultural Heritage.

NOTE: Overburden removal within the 2023 proposed extension would be <u>subject to planning conditions</u>, and these conditions should be included in the management plan and implemented.

The following mitigation measures should be implemented for this activity:

Environmental Topic	Measure
Dust	As the phasing of removals would be over an extended period, this would allow for the selection of good weather conditions for the prevention of dust. Overburden removal should not be carried out dry and/or windy weather conditions. Soils condition should be moist but friable at the time of earthworks to minimise available material for the generation of dust.
Water	Excavation and moving of subsoil during stripping back will be planned outside periods of heavy rainfall, to limit/prevent the risk of suspended solids becoming entrained in surface water runoff.
Water	Silt fences will be installed downgradient of the stripping back operations.
Health & Safety	Appropriate fencing and signage will be installed to warn trespassers of the risk of climbing the bund and the steep quarry edge.
Dust / Visual	Boundary earth berms should be seeded with grass as soon as possible (assuming appropriate planting season).
Dust / Visual	Boundary earth berms should be planted with appropriate hedgerow species as soon as is possible, implementing the planting plan which has been used for existing earth berms (i.e. a double line of hawthorn whips has been planted at 1m spacing).
Dust / Visual	Supplemental planting should be implemented on any gaps in existing boundary hedgerows.
Dust / Visual	Implement grass seeding on inactive overburden stockpiles.
Visual / Landscape	Consider planting additional treeline / hedgerow along the northern boundary of the entrance road and other site areas to provide further site screening.
Biodiversity	See Chapter 8 of 2023 EIAR for quarry extension for detailed measures
Biodiversity	All planting should be comprised of native species appropriate to the area.
Biodiversity (Lighting)	Lighting mitigation measures will follow *Bats & Lighting Guidance Notes for: Planners, engineers, architects and developers* (Bat Conservation Ireland, 2010).
Biodiversity (Trees / hedgerow / Scrub)	The Wildlife Act 1976, as amended, provides that it is an offence to cut, grub, burn or destroy any vegetation on uncultivated land or such growing in any hedge or ditch from the 1st March to the 31st August. Exemptions include the clearance of vegetation in the course of road or other construction works or in the development or preparation of sites on which any building or other structure is intended to be provided. Trees along the boundary will be protected in accordance with BS: 5837:2012 Trees in relation to design, demolition and construction.

Environmental Topic	Measure
Biodiversity (Trees / Bats / Birds)	No tree / hedgerow removal to occur during the bird nesting season (April-June). Ecologist: A bat specialist will work with the contractor to ensure that the loss of trees is minimised and that trees earmarked for retention are adequately protected. Ecologist: Ten bird nesting boxes (various types including open fronted and entrance hole) will be located within the site boundary at locations specified by an ecologist.
Cultural Heritage	See Chapter 10 of 2023 EIAR for quarry extension for detailed measures
Cultural Heritage	The townland boundary (CHF1/AP1) that corresponds with the existing field boundaries are to be retained as part of the proposed development. Any required berm formation should be considered to avoid significantly overshadowing the townland boundary. In the event that the townland boundary cannot be avoided, the boundary should be recorded by an archaeological survey and any earthworks in close proximity should be subject to archaeological monitoring.
Cultural Heritage	In the event of archaeological features or material being uncovered during the construction phase, it is crucial that machine work cease in the immediate area to allow an archaeologist to assess, excavate and record any such material.

6.2 OPERATIONAL PHASE

All staff and subcontractors have the responsibility to:

- Understand the importance of avoiding pollution onsite, including noise and dust, and how to respond in the event of an incident to avoid or limit environmental impact;
- Respond in the event of an incident to avoid or limit environmental impact;
- Report all incidents immediately to the project manager;
- Monitor the workplace for potential environmental risks and alert the site manager if any are observed; and
- Co-operate as required, with site inspections.

6.2.1 Noise & Vibration Characteristics and Management

Noise emissions on site are primarily associated with:

- stone blasting operations,
- breaking of oversized stones with a hydraulic rock breaker,
- transport of blasted stone via excavator and front-loader to the crushing machine and screening machine,
- the transport of graded stone to stockpiles,
- the loading of transport lorries,
- the operation of the agricultural lime hopper and lime mill, and
- the operation of the onsite generator.

Good Practice Measures

In order to ensure that noise levels are in adherence with limits, the following measures should be implemented where practical on site:

- Inform on-site workers, hauliers and contractors of noise considerations on-site and on public access roads.
- Ensure site owned/operated vehicles are well maintained (especially exhaust systems).
- Timely and adequate maintenance of all on-site equipment, including preventative maintenance, to ensure efficient operation and minimisation of potential noise.
- Minimise height which material drops from plant and machinery.
- Testing of emergency generators or alarms should be carried out during the daytime of the normal working week between 09.00 and 17.00 Monday to Friday.
- Maintain site roads and yard in good condition.
- Where possible, avail of existing topography and buildings as noise barriers with respect to the closest noise sensitive receptors when siting any new equipment or moving existing equipment.
- Maintain boundary earth berms as a noise mitigation. For better effect, berms should exceed source-receptor sightline by at least 1 meter.
- Use of rubber linings on chutes and transfer points. Enclosure and cladding of processing plant, where applicable.
- Consider potential noise as an aspect in future infrastructure works. Consult with manufacturer regarding associated noise emissions prior to purchase of new equipment.
- Use suitably qualified expert for blasting operation to ensure optimum blast design and implementation.

6.2.2 Dust Characteristics and Management

The Primary effects relating to dust as a result of this proposal include the following:

- Operational Dust:-
  - Road dust and collection of material from the proposed development.
  - Mechanical Plant Equipment associated with the proposed development.
  - Exposed soils, un-vegetated topsoil mounds and material stockpiles.

Good Practice Measures

In order to ensure that dust levels are in adherence with limits, the following measures should be implemented where practical on site:

- Use of conveyors rather than internal haul roads, where practical,
- Locate fixed/mobile processing plant within the quarry void, where practical,
- Locate haul roads, tips and stockpiles away from sensitive receptors and take into account prevailing wind directions,
- Lay out and construct stockpiles, tips and mounds to minimise dust creation,
- Use screening berms,
- Use crushing and screening plant within its design capacity,
- Enclose fixed conveyors and the processing plant,
- Where applicable, provide a dust removal system for plant,
- Use water sprays and mists as dust suppression measures,
- Compact, grade and maintain internal haul roads,
- Limit the drop height of falling material,
- Impose speed restrictions within quarry and access roads,
- Reduce speeds and limit movement of vehicles, use upswept exhausts,
- Use water bowsers, sprays or vapour mists,
- Spray exposed surfaces, e.g. unsurfaced haul roads, stockpiles,
- Vegetate exposed surfaces, e.g. topsoil and overburden storage mounds,
- Carry out road sweeping, where appropriate,
- Provide vehicle/wheel washing facilities and surface the road between the washing facility and the quarry entrance,
- Use covered (closed or sheeted) vehicles, or spraying, for the transport of dry fine materials,
- Clean up any accidental spillages on public roads, as soon as such a spillage arises or is notified.

6.3 WATER PROTECTION

Risk to water on site would be primarily associated with:

- Runoff from working areas and stockpiles,
- Storage and use of fuels, oils and lubricants,
- Leaks from plant and machinery.

Good Practice Measures

In order to ensure that protection of surface-water and groundwater, the following measures should be implemented where practical on site:

- Limit erosion by:
  - Rapidly vegetating exposed areas,
  - Vegetating the surfaces of overburden and topsoil mounds,
  - Progressively restoring worked-out areas, where practical,
  - Limiting the areas of topsoil/overburden stripping exposed at one time.
- Provide bunding to all fuel/chemical storage tank areas: 110% of the capacity of the largest tank within the area or 25% of the total volume of the substance which could be stored within the area, whichever is greater),
- Covering of bunded areas should be considered to minimise the requirement to dispose of potentially contaminated rainwater collecting in the bund,
- Use spill pallets to store drums of chemicals and oils,
- Assess and monitor the integrity and watertightness of all bunding structures,
- Provide spillage control equipment on site (booms and suitable absorbent materials, etc.) to contain any accidental spillage,
- Ensure blasting practice minimises the risk of occurrence of nitrate/ammonia residues by proper blast design and implementation, appropriate disposal of any excess explosives, and selection of the appropriate type of explosives.

6.4 BIODIVERSITY

6.4.1 Sand Martin (*Riparia riparia*)

A Sand Martin survey will be carried out prior to the commencement of each breeding season to ensure that there is suitable breeding habitat available and to specify suitable buffer zones/work practices.

The objective on an ongoing basis is to ensure that there is sufficient habitat available to maintain a viable breeding population within the existing quarry.

Under no circumstances will there be direct impacts on habitat supporting actively breeding birds.

A survey will be carried out prior to the closure of the quarry and site specific mitigation, based on up to date survey data, will be incorporated into the final closure plan.

6.4.2 Nocturnal Species - Lighting Strategy

Lighting during now light and night time hours has the potential to impact upon nocturnal species.

- The lighting scheme changes should consider UK Bat Conservation Trust best practice for outdoor lighting.
- Screening by existing trees should be retained in so far as is possible.
- Lighting should be focused away from treelines and hedgerows along external boundaries.
- Spacing between lights should be maximised.

It is noted that works operational activity will be confined to daytime hours (07:30hrs – 18:00hrs Mon-Fri 07:30hrs-16:00hrs Saturday). Therefore, operational lighting will only be required during the winter months and will not impact on bats (as this coincides with bat hibernation).

6.4.3 Invasive Species

It is noted that the amber list invasive species Buddleia was recorded at the site. There is no statutory obligation to remove this species. However, should it be concluded that they should be removed, the following treatment methods are recommended.

Buddleia is straightforward to control using a mixture of mechanical removal and herbicide treatment.

- Buddleia favours disturbed sites, physical grubbing of plants can provide ideal conditions for the germination of seeds. Therefore, care needs to be taken to ensure re-vegetation of controlled areas is undertaken swiftly.

- The branches of Buddleia are capable of rooting as cuttings, so care should also be taken to ensure material is disposed of in a manner to avoid this risk.

- As mature plants are present, the preferred method of treatment is cutting back to a basal stump or grubbing out followed by chemical herbicide treatment. Herbicide applications must only be applied in line with manufacturers recommendations. Recommended practice for the application of herbicides requires cutting back of plants to a basal stump during active growth (late spring to early summer) which is then treated (brushed on) immediately with a systemic weed killer mix. Foliar application of triclopyr or glyphosate may be adequate for limited infestations of younger plants but should be followed up at 6 monthly interval until the supervising ecologist can certify that the plant is no longer extant within the works area.

6.5 SITE RESTORATION PHASE

The Restoration Plan (PL Ref 15/5484) has been updated to accommodate a 2023 planning application. This updated Restoration Plan is shown in **Appendix G** below.

Previous and current trial digging has found overburden depths of 500mm to 1000mm across the proposed excavation areas. Assuming an average overburden depth of 750mm, the following estimated quantities of overburden would be available for reinstatement:

Phase	Area (ha)	Overburden Volume (m3)
Existing Areas	4.718	35,385
Proposed Extraction	3.84	28,800
Total	**8.558**	**64,185**

The following table indicated the proposed timeline for the implementation of restoration phases at Rockmills Quarry:

Year	Restoration Phase	Restoration Area (ha)	Quarry Area (ha)	% Total Restored Area	Notes
2024	1R	0.516	2.923	17.65%	Restored to pasture
2024-2025	2R	0.713	2.923	42.06%	Restored mixed habitats
2031	3R	1.036	6.763	33.50%	Restored mixed habitats
2031	6R	3.322	6.763	82.62%	Bare stone habitat retained

It is noted that, in addition to stored overburden, some of the extracted stone is not of a sufficient commercial grade. This material is also stored onsite and would be used in the restoration of the site. It is also noted that some of the existing removed overburden has been used to create berms on the boundaries of the extraction area, which would remain in place.

All the work would be carried out by front loaders and excavator, including soil movement and soil preparation. No separate planning permission or waste permit would be required to complete the site restoration plan as no soils or other material will be imported.

The area designated as 1R would be restored to pasture. The restored area would be seeded with perennial ryegrass and clover as soon as conditions allow. There would be a minimum 1m depth of topsoil and subsoil over the floor of the quarry. A 2m (high) x 6m (wide) boundary earth berms would be established on the boundary of the restored pasture area to prevent runoff to exposed rock on the floor of the quarry.

The area designated as 2R, within the existing extracted floor of the quarry, would be restored to promote the development of mixed habitats through natural regeneration. Areas of restored soil cover (minimum 1m depth) and rock rubble would be created and sectioned off from the operating quarry area. A tracked excavator would be used to compress an area of the restored soil habitat to provide an area of wetland / periodic wetland habitat.

For the proposed new 2023 extraction application, the area designated as 3R would also be restored to mixed habitats. The area designated as 6R would be retained as bare stone habitat. If material is available onsite (i.e. excess waste stone or soil) the maximum area possible would

be restored with a minimum 1m of soil with sloped stone rubble verges. Therefore, 3R mixed habitats would extend into the 6R area along the northern boundary, in so far as available materials allow.

The approach would allow for the establishment of pioneering flora of local provenance and would provide some open spaces required for foraging, whilst providing some cover for a variety of species.

The current restoration plan reserves the areas designated 4R (services yard) and 5R (ramp, quarry equipment and stockpile) areas for potential future extension planning permission.

In the event that the operator does not apply for any future quarry extensions, or future planning permissions are unsuccessful, the following would be carried out on final cessation of quarrying activities;

1. Removal of all plant and machinery.
2. Ripping up of any hardcore or concrete surfaces to a depth of 300mm,
3. Fill in with clean stone or remove any sub surface tanks,
4. Re-spreading and grading of any remaining stone / overburden / topsoil materials available on site.

The following mitigation measures should be implemented for this activity:

Environmental Topic	**Measure**
Dust	As the rehabilitation phase would be a planned event, this would allow for the selection of good weather conditions for the prevention of dust. Overburden removal should not be carried out dry and/or windy weather conditions. Soils condition should be moist but friable at the time of earthworks to minimise available material for the generation of dust.
Dust	
Water	Excavation and moving of subsoil during stripping back will be planned outside periods of heavy rainfall, to limit/prevent the risk of washing out of soils.
Health & Safety	Appropriate fencing and signage will be installed to warn trespassers of the risk of climbing the bund and the steep quarry edge.
Dust / Visual	Boundary earth berm and 1R restored area should be seeded with grass as soon as possible (assuming appropriate planting season).
Dust / Visual	Boundary earth berm should be planted with appropriate hedgerow species as soon as is possible (i.e. a double line of hawthorn whips planted at 1m spacing).
Biodiversity	All planting should be comprised of native species appropriate to the area.
Biodiversity	Once materials have been distributed and prepared for restoration in mixed habitat areas, these areas should be sectioned off from quarry traffic an allowed to develop naturally.

6.5.1 Reinstatement Biodiversity Objectives

The development of the quarry extension will result in the loss of habitat for certain floral and faunal species but will provide habitats for other species. For example, there will be a nett loss of grassland habitat during operation, however there will additional habitat provided for the protected species which utilise active quarries such as Sand Martin, Peregrine Falcon, amphibians etc. The objective during reinstatement is to restore some of the habitats that will be removed by the proposed development whilst retaining important habitats which developed during the operation of the quarry. This will require active management of the existing quarry and proposed extension area during the reinstatement process and in subsequent years.

The key objectives are as follows:

1. Natural recolonisation is generally preferred to large scale planting.
2. Control of invasive species on an ongoing basis.
3. Specific measures that are targeted towards certain key ecological receptors including, Sand Martins, Badgers and bats.
4. Maintenance/restoration of commuting routes/green corridors in the context of the wider landscape
5. Provision of new habitats.

6.5.2 Specific Measures

6.5.2.1 Quarry faces

Due to the geological nature of the North Cork landscape, high rocky vertical cliffs are largely confined to the coast and are patchy distributed in higher mountainous areas. Cliffs in quarries can therefore be important ecological elements in the wider landscape. Following decommissioning, there will be multiple faces of different heights within the quarry and along its boundary. It proposed that these faces will be fenced to ensure they do not create a hazard and will be left largely intact. The faces are not visually intrusive in the context of the local landscape and will naturally become colonised by vegetation over time. Such faces can provide nesting habitat for birds including ravens, peregrine falcons, etc.

6.5.2.2 Recolonisation and additional planting

It is noted that some planting of specific areas is proposed as detailed below. However, in general natural recolonisation will be allowed to proceed. This will ensure that such areas are colonised by a mixture of native species from the surrounding landscape. These species will be appropriate to the local conditions. In general the use of wildflower mixes and extensive planting in not recommended, as natural recolonisation is considered a more effective means of revegetating a disturbed site.

New planting is recommended along external boundaries where is also serves a screening function. This will also provide enhanced foraging habitat and green corridors for bat and birds.

6.5.2.3 Tree planting

With respect to habitat enhancement the existing ecological characteristics of the site are of relevance. It is noted that groups of trees have much greater wildlife value than isolated individual trees particularly on exposed sites such as this one. Groups of trees create shelter and their own micro-climate, which does not occur with individual trees. Groups of trees also provide a range of food sources for invertebrates as well as cover for fauna and a range of nesting habitats. Groups of trees with a linear structure, such as hedgerows, treelines or bands of woodland, provide commuting routes which allow fauna to move through the landscape under cover. Woodland edge can also provide high quality feeding habitat for birds and bats.

Natural woodland has a complex structure with a mix of different layers at different heights and which are subject to different light regimes. This structure of canopy, sub-canopy and shrub layer can be replicated by including a suitable mix of species which grow at different rates and which reach different heights at maturity. It is also important to plant sufficient trees to allow dense cover to develop in certain parts of the site. It is noted that areas of cover within which there is little disturbance, even if such areas are small, can be important for open exposed sites and sites with a high degree of human disturbance. For example, they provide areas where mammals can safely hide during the day. Such areas can be developed by ensuring that paths are naturally diverted away from certain identified areas which can then be allowed to develop a denser vegetation.

The use of native trees is considered very important in increasing the ecological value of a given site. For example, native willow can support over 200 species of insect, a non-native conifer such as Leyland Cypress will support very few. The incorporation of a range of native species which flower and fruit at different times can help to support invertebrate species at different stages of their lifecycle and will also help to create a natural woodland structure.

Planting details:

- All works around trees to be carried out in accordance with British Standards for Tree protection BS 5837:2012 which details protection measures for the root zones of trees.
- All trees and shrubs to be supplied and planted following B.S 3936.
- All existing vegetation except for trees and hedgerows shown as retained to be removed and cleared of site.
- Shrub planting beds to be 450mm good quality topsoil to BS 3882
- Tree pit shall be excavated not more than 2 days prior to planting.
- All tree pits to maintain horizontal base and vertical sides, sides to be scarified, pit bottom to be broke up to a depth of 200mm with slightly raised centre.
- Trees to be planted upright with collar at finished soil level and back filled with previously prepared planting material.
- All new trees should be staked using a short double timber staking system mature relocated trees to be guyed where required.
- Planted trees to be protected from rabbits with 0.6m length spiral tree guards supported by bamboo canes. where required.
- Native trees will be of Irish origin and preferably of local stock

Time scale for implementation:

- Deciduous trees and shrubs - Late October to late March
- Herbaceous plants: September/October and March/April

The following planting scheme is proposed:

Proposed planting scheme

Species		Approx. Spacing	Size	Percentage	Notes
Woodland planting					
Alder	*Alnus glutinosa*	1m	bare root (120-150cm high)	30%	All plants to be of Irish origin.
Willow	*Salix sp.*	1m	bare root (120-150cm high)	15%	
Sessile Oak	*Quercus petraea*	1.5	bare root (120-150cm high)	10%	
Scots Pine	*Pinus sylvestris*	1.5	bare root (120-150cm high)	5%	
Hawthorn	*Craetagus monogyna*	1m	bare root (120-150cm high)	10%	
Hazel	*Corylus avellana*	1m	bare root (120-150cm high)	10%	
Birch	*Betula pendula,*	1m	bare root (120-150cm high)	10%	
Spindle	*Euonymus europaeus*	1m	bare root (120-150cm high)	2.5%	
Crab Apple	*Malus sylvestris*	1m	bare root (120-150cm high)	5%	
Guelder Rose	*Viburnum opulus,*	1m	bare root (120-150cm high)	2.5%	

6.5.2.4 Aftercare programme

A 5-year aftercare programme will be implemented. Any plants which die, are removed or become seriously damaged or diseased within a period of five years from the completion of the development shall be replaced within the next planting season. The efficacy of rabbit/hare control measures will be assessed on an ongoing basis. Weed control should not be necessary in Years 1 or 2, however in year 3 some hand weeding may be required. The use of herbicides is not recommended in immediate proximity to the newly created watercourse. Thinning of trees may be required in year 3. The objective is to have a base of healthy, mature trees.

6.5.2.5 Aquatic Habitats

As a biodiversity enhancement measure and to provide habitat for amphibians, an ephemeral wildlife pond has been incorporated into the reinstatement design. This will be designed in line with the provisions outlined in the *Amphibian Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth* (Baker et al. 2011). This will hold water during periods of heavy rainfall and will provide potential habitat for Common Frog and for a range of aquatic flora and fauna including macroinvertebrates. Natural recolonisation by emergent plants, beginning at the margins will soften the edges of the lagoons creating a natural looking feature which will not be visually intrusive. From a biodiversity viewpoint, these lagoons have the potential to provide habitat for a range of fauna including aquatic macroinvertebrates and for a range of bird species.

The sediment within lagoon will become naturally vegetated and result in areas of open water, with woodland along its periphery. Small, vegetated, lowland ponds are not common in the wider landscape and therefore the lagoon will provide valuable local habitat.

6.5.2.6 Sand Martin

Sand martins are listed as a bird of medium conservation concern by Birdwatch Ireland. These birds often breed on exposed banks especially within sand and gravel quarries.

While the overall site remains active, there is potential to create habitat for Sand Martin within the active quarry areas (existing and proposed).

However, once quarry operations are complete, the management plan will move to a new phase involving habitat creation. This will involve the creation of artificial habitat for Sand Martin to ensure that Sand Martin can continue to nest at the reinstated quarry once extraction activities have ceased. In order to facilitate this, the applicant will set aside an area of habitat for artificial nesting habitat.

Rohrer et al. (2019) carried out a case study on the use of Sand Martins of restored and managed habitats within a quarry sites. This study found that Sand Martins preferred more surface of water bodies, shorter distances to flowing water, older sites and extraction sites which produce aggregates instead of cement. At the colony scale, Sand Martins preferred southwest orientations, and stockpiles to vertical extraction faces. At the burrow scale, the birds preferred the most vertical areas of the face. Simple interventions can enhance habitat quality and conservation of cliff-nesting birds. Anti-predator skirts can also be used on the base of artificial structures as required.

The proposed artificial habitat creation will take place within the existing quarry. At the cessation of extraction works in this area, a cliff of approximately 3m high will be retained. Based on an assessment of the existing Sand Martin nesting habitat at the site, the proposed cliff length will be 50m. This cliff face will be graded (as per guidelines described above). Polythene pipes (>6mm diameter) will be placed or drilled into the cliff face and stabilized using a dry concrete mix. This will create a more permanent structure which needs limited maintenance. The following management and monitoring measures will also be implemented:

- Treat the face so that it is perfectly vertical before each breeding season;
- The vertical face must reach the ground in order to prevent access by predators;
- Avoid disturbance related to extraction activities close to colonies;
- Eliminated the vegetation that might grow near or on the faces;
- A protective mesh will be placed around the base to prevent access by rabbits.

It is essential to determine whether the actions have been successful and monitor the Sand Martin populations at the quarry.

1. Determine colonisation success of the alternative breeding stocks/faces; count the number of excavated nests at the beginning of the season (note that later in the season is not as effective as breeding adults may excavate new holes for a second clutch);
2. Determine whether the colony has had breeding success.
    - Approximately 1 month after the breeding season has begun, chicks will be visible at the at the entrance holes;
    - Once the colonies are abandoned (September to October) count the nests with signs of frequent use; the sand around the entrance of the nest will be eroded, nest material can be seen (feathers, small twigs) and droppings will be visible at the entrance to the nests and
    - Look for signs of predation.

6.5.2.7 Bats

The landscape plan provides additional native woodland on a berm which runs along the periphery and this will provide additional foraging habitat as these trees mature. Natural recolonisation will allow woodland habitat to develop over time which will provide foraging and commuting habitat for bats at this matures.

Key bat foraging areas are likely to be located along internal boundary hedgerows/treelines within the extension area. The trees within the site boundaries lack the structural elements that would make them suitable for roosting bats. Therefore, the provision of bat boxes suitable for the species recorded within the site are recommended. Examples of same are listed below. The boxes have been selected to provide a range of roosting opportunities for different species and colony sizes. In general, they can be sited on existing trees, however the pole mounted bat boxes will be used where necessary. The boxes will be installed by a supervising ecologist considering relevant factors including foraging resources, commuting routes, future landscape development, and lighting and will be regularly checked for usage as part of an ongoing ecological monitoring programme.

Vincent pro bat box

Improved Roost-Maternity Bat Box

Bat Box 1FD

Bat Colony Box 1FS universal

Vincent Pro Bat Box
Five Vincent Pro bat boxes will be provided. This box features three vertical chambers of different sizes, providing ideal roosting space for a variety of species. Beneath the crevice entrances is a ladder which provides a rough surface for bats to land. Limited cleaning is required for these boxes as the droppings will fall out of the bottom of the chambers. The front and top of the box are black which helps the box to absorb heat.

This bat box can be used by Leisler's, Common Pipistrelle, Soprano Pipistrelle, Brown long-eared, Natterer's and Whiskered Bat.

Improved Roost-Maternity Bat Box
Two improved Roost-Maternity Bat Box will be provided. This box is suitable for larger roosts or maternity groups of the small crevice-dwelling bats such as pipistrelles. This has three separate crevices, each with different temperature characteristics and a wide entrance with accurately sized opening. Ideal for Pipistrelles and deters unwelcome birds etc. Internal ceramic heat sinks ensure improved temperature stability in crevices.

Bat Box 1FD
Two Bat Box 1FD will be provided. Suitable for Pipistrelle and Nathusius' Pipistrelle Bats as well as Daubenton's Bats and Long-Eared Bats. This is especially in mixed bat zones and for initial settlement attempts. The front panel can be removed for inspection and cleaning.

Bat Colony Box 1FS universal
Two Bat Colony Boxes (1FS Universal) will be provided. This type of box is readily used for forming large colonies, by Daubenton's Bats and Brown Long-Eared Bats. Nursery roosts with between 70 and 100 animals are common. Thanks to the large interior and the integrated clinging options, for large numbers of individuals, this type of box is very attractive for forming nursery roosts and for rearing young. The box is suitable as a summer and temporary roost.

6.5.2.8 Badger

Some foraging Badger was observed near the southern boundary of proposed extension area. However, no active setts were recorded within the proposed extension area or in immediate proximity to it. Grassland habitat which has the potential to provide foraging habitat for Badger will be removed during the proposed expansion of the quarry. However, it is noted that foraging activity was confined to a small area close to the external boundary.

Badgers preferentially forage within grassland and woodland habitat. Availability of grassland habitat in not a limiting factor within the wider landscape. As woodland matures within the proposed development site and extension area, it will provide foraging habitat for Badgers, which is comparable to the areas of grassland that were removed. Prior to the closure of the quarry, a detailed survey will be carried out to determine the usage of the site by Badgers. If any changes of Badger social groups are recorded, then the restoration plan will be modified accordingly to ensure the impacts on badgers are minimised.

6.5.2.9 Invasive Species

A detailed invasive species management plan (ISMP) will be submitted prior to closure based on up to date survey data. This will ensure that all high-risk invasive species are completely removed from the existing quarry and proposed extension area. No impediment to the removal of these species within the landholding, as part of a detailed invasive species management plan, have been identified.

6.5.3 Additional measures

The applicant will clearly define the management responsibility for the site restoration work. The supervising ecologist will draw up a management plan for the aftercare of the site following closure.

A survey for invasive species will be carried out prior to closure and a site-specific invasive management plan will be prepared and implemented if required.

Sand Martin nests within the existing quarry and vertical sandy faces will be identified by the supervising ecologist which are suitable for nesting. These faces will be preserved.

Successful reinstatement programme will include as much naturally colonising vegetation as possible, as such vegetation (a) allows a head start, (b) reflects the native flora and (c) provides local flora and fauna banks to enhance ecological value.

7.0 COMPLAINTS PROCEDURE

Planning permission 15/5484 requires that the operator keeps a record of complaints. In the event of the site receiving a complaint regarding a nuisance, the following protocol will be followed.

7.1 COMPLAINTS PROCESS

Any complaints received by the facility from members of the public or via regulatory bodies (including EPA and Local Authority), will be recorded and investigated.

In order to assist in the investigation and determining the source of the nuisance, as much information and detail as is possible about the complaint will be recorded.

7.2 MEANS OF CONTACT

The facility will be readily contactable to outside organisations and to members of the public.

Should an off-site issue arise, the complainant will have a readily available means of getting in touch with the relevant contact personal.

7.3 COMPLAINT RECORDING

Should a complaint be received, the following information will be recorded:

- Complaint details (including address of complainant wherever possible) and the location where nuisance was perceived.
- The time and a description of the nuisance (duration, persistence, offensiveness, character, severity etc.).
- Weather conditions including atmospheric pressure, wind speed and wind direction (noise & odour).
- Operational status of the facility (noting any abnormal conditions that may have caused the complaint).
- Details of the proposed corrective action, if required.
- Details of follow up communication with the complainant.

A sample *'Complaint Report Form'* is provided in **Appendix F** below.

Records of complaints received will be kept in an appropriate file in the site office for inspection and review by both internal and external personnel.

7.4 COMPLAINT SCREENING

As part of each complaint received, the history of complaints will be objectively assessed against the wider environment to ensure that the source of the nuisance is traced back to the correct source.

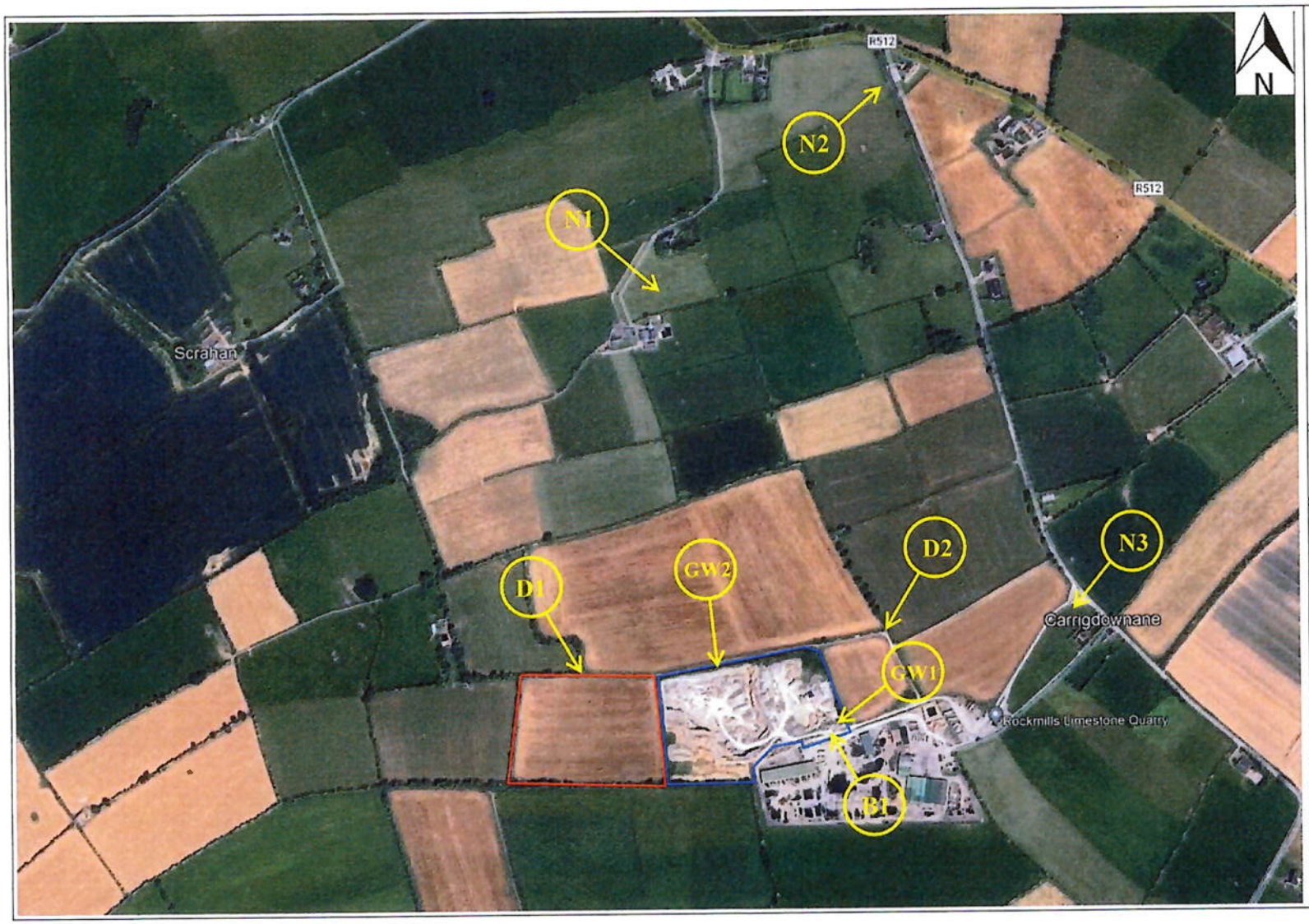
If the source is from the facility, it is essential that the source is correctly identified in order that mitigating measures can be applied effectively and correctly.

7.5 COMPLAINT INVESTIGATION

In the event that the facility is found to be causing a nuisance, as determined and confirmed by investigation into off-site complaints or during routine checks; measures will be taken to determine the source, and the following courses of action as detailed below shall be taken:

- Additional checks to identify the extent of the issue and potential causes i.e., material and/or process activity,
- Examination of the operational activities at the facility at the time of the complaint,
- Examination of the meteorological conditions at the time of the complaint,
- Carry out a review of the operational procedure and process controls and instigate any control measures immediately following identification of the problem,
- Further checks, monitoring or sampling may be carried out to ensure the issue has been addressed and to monitor the effectiveness of any control measures undertaken,
- Contacting the complainant following identification and/or resolution of a nuisance issue can improve relations with neighbours.

APPENDIX A
ENVIRONMENTAL MONITORING MAP



Notes:
Current Quarry
Proposed Development

Noise Monitoring Locations
N1 – NSR c.555m North
N2 – NSR c.975m North-East
N3 – NSR c.400m East

Dust Locations
D1 – c.115m East
D2 – c.125m West

Blast Locations
B1 – Beside Office

Groundwater Wells
GW1 – Monitoring Well
GW2 – Monitoring Well

DENNIS O'KEEFE, ROCKMILLS QUARRY

CURRENT PLANNING CONDITION MONITORING LOCATIONS

PANTHER ENVIRONMENTAL SOLUTIONS LTD
UNIT 4
INNOVATION CENTRE
GREEN ROAD
CARLOW
R93 W248
TELEPHONE: 059 91 34222
MOBILE: 087 851 9284
EMAIL: info@pantherenvs.com
WEB: www.pantherenvsl.com

File location:		scale: NTS	A4
drawing status:	REPORT	datum:	GOOGLE
		drawn:	PES
drawing no.	rev	checked:	MF
EIAR_21547	A	approved:	-
		date:	29-07-22

APPENDIX B
INVENTORY OF WASTE SERVICE PROVIDERS

WASTE SERVICE PROVIDERS

Waste type	LoW code	Info	Handling Company	Info	Destination
Mixed Municipal Waste	20 03 01	**Name:** **Licence No:** **Expires:**	Country Clean Recycling NWCPO-13-11220-07 14/09/2025	**Name:** **Licence No:** **Expires:**	
Paper and Cardboard Packaging	20 01 01	**Name:** **Licence No:** **Expires:**	Country Clean Recycling NWCPO-13-11220-07 14/09/2025	**Name:** **Licence No:** **Expires:**	
Glass	20 01 02	**Name:** **Licence No:** **Expires:**	Country Clean Recycling NWCPO-13-11220-07 14/09/2025	**Name:** **Licence No:** **Expires:**	
Metals	20 01 40	**Name:** **Licence No:** **Expires:**	Country Clean Recycling NWCPO-13-11220-07 14/09/2025	**Name:** **Licence No:** **Expires:**	
Waste Lubricating Oils	13 01 13* 13 02 08*	**Name:** **Licence No:** **Expires:**	McBreen Environmental Drain Services Ltd NWCPO-14-11283-02 23/09/2024	**Name:** **Licence No:** **Expires:**	
Waste Containers contaminated with Oil / Lubricant	16 07 08*	**Name:** **Licence No:** **Expires:**	McBreen Environmental Drain Services Ltd NWCPO-14-11283-02 23/09/2024	**Name:** **Licence No:** **Expires:**	
Interceptor Sludges	13 05 03*	**Name:** **Licence No:** **Expires:**	McBreen Environmental Drain Services Ltd NWCPO-14-11283-02 23/09/2024	**Name:** **Licence No:** **Expires:**	
Septic Tank Sludges	20 03 04	**Name:** **Licence No:** **Expires:**	PP Drains Ltd NWCPO-15-11525-02 07/05/2025	**Name:** **Licence No:** **Expires:**	Mallow WWTP D0052-02 n/a

Waste type	LoW code	Info	Handling Company	Info	Destination
Septic Tank Sludges	20 03 04	**Name:** **Licence No:** **Expires:**	McBreen Environmental Drain Services Ltd NWCPO-14-11283-02 23/09/2024	**Name:** **Licence No:** **Expires:**	
		Name: **Licence No:** **Expires:**		**Name:** **Licence No:** **Expires:**	
		Name: **Licence No:** **Expires:**		**Name:** **Licence No:** **Expires:**	
		Name: **Licence No:** **Expires:**		**Name:** **Licence No:** **Expires:**	
		Name: **Licence No:** **Expires:**		**Name:** **Licence No:** **Expires:**	
		Name: **Licence No:** **Expires:**		**Name:** **Licence No:** **Expires:**	
Fluorescent tubes and other mercury-containing waste	20 01 21*	Small quantities brough to local bring centre			
Batteries and accumulators	20 01 33*	Small quantities brough to local bring centre			
WEEE	20 01 35*	Small quantities brough to local bring centre			

APPENDIX C
WASTE TRANSPORT RECORD

WASTE RECORD SHEET

Note: This table is based upon the EPA licence reporting template "*Pollutant Release and Transfer Record – Transfers of Waste*".

Collection Date	Waste type	LoW code	Quantity exported	Info	Handling Company	Info	Destination
				Name: **Licence No:** **Expires:** **Vehicle Reg**		**Name:** **Licence No:** **Expires:**	
25/10/2022	Septic Tanks Sludge	20 03 04	1,000 l	**Name:** **Licence No:** **Expires:** **Vehicle Reg**	PP Drains Ltd NWCPO-15-11525-02 07/05/2025 93 C 15361	**Name:** **Licence No:** **Expires:**	Mallow WWTP D0052-02 n/a
				Name: **Licence No:** **Expires:** **Vehicle Reg**		**Name:** **Licence No:** **Expires:**	
				Name: **Licence No:** **Expires:** **Vehicle Reg**		**Name:** **Licence No:** **Expires:**	
				Name: **Licence No:** **Expires:** **Vehicle Reg**		**Name:** **Licence No:** **Expires:**	
				Name: **Licence No:** **Expires:** **Vehicle Reg**		**Name:** **Licence No:** **Expires:**	

APPENDIX D
ENVIRONMENTAL ACTION PLAN

ENVIRONMENTAL ACTION PLAN				
REF	**AREA / ITEM**	**ACTION**	**TIMEFRAME / DEADLINE**	**COMMENTS**
1.	BUNDED FUEL TANKS	Install crash barrier protection.		To prevent collision, tank failure and groundwater contamination.
2.	BUNDING	Provide appropriate bunding for all chemicals/oils/ fuels and AdBlue IBC (i.e. bunded containers etc.) Bund capacity at >110% of largest/single vessel and >25% of total volume.		To provide appropriate
3.	GROUNDWATER WELLS	Install concrete plinths around the steel casing of the well heads.		To prevent surface water seeping down the annulus between the casing and subsoil.
4.	BLASTIN OPERATIONS	Investigate alternative to ammonium nitrate/fuel oil mixture (Kemex).		To prevent/reduce the occurrence of ammonia/nitrate residues.
5.	OVERBURDEN STOCKPILES	Investigate the practicality of planting inactive overburden stockpiles with grass.		To mitigate dust / visual impacts.
6.	PLANTING	Investigate the practicality of additional planting along the northern boundary of main site access road.		To provide additional visual screening for existing structures.
7.	BLAST NOISE & VIBRATION	Move monitoring location to a point near the residence at the site entrance.		To allow direct confirmation of blast noise/vibration results with limits.
8.	DUST MONITORING	Relocate sample points away from hedgerows/ treelines and dirt tracks. Dust stands to be designed to prevent perching birds above sample vessel.		To ensure dust samples are representative of potential impacts of site operations.
9.	NEW BUILDINGS	Any new or replacement buildings or tanks should be composed of cladding with a dark, or optimally dark green finish.	Ongoing	To minimise visual impact potential.
10.	SAND MARTIN	Qualified ecologist to carry out a survey prior to each breeding season.	Ongoing	Ensure sufficient habitat to maintain a viable breeding population within the quarry
11.	INVASIVE SPECIES	Implement removal strategy for Buddelia		Remove invasive species from the site.

APPENDIX E
WEEKLY ENVIRONMENTAL CHECKLIST

ENVIRONMENTAL CHECKSHEET (WEEKLY)

SITE:	Carrigdownane Upper, Rockmills, Killdorrery, Co. Cork
ASSESSOR:	
DATE:	

REF	AREA / ITEM	EMISSION	CHECK	COMMENTS
1.	Equipment	DUST	Any equipment emitting unusual levels of dust i.e. over capacity use or requires repair or cleaning?	
2.	Equipment	NOISE	Any equipment emitting unusual levels of noise i.e. requires repair or cleaning?	
3.	Equipment	DUST	Condition and correct use of dust abatement onsite e.g. dust extraction and filters?	
4.	Equipment	WATER	Any oil leaks from equipment and vehicles? Any evidence of oil leaks on the ground?	
5.	Equipment	NOISE / AIR	All vehicles and machinery are switched off when not in use?	
6.				
7.	Operation	DUST	Stockpiles located within extraction void (where practical)?	
8.	Operation	DUST	Are stockpile water sprinklers operating correctly?	
9.	Operation	DUST	Are vehicles complying with onsite speed limits?	
10.	Operation	NOISE / DUST	Are roads and haul routes in good condition (potholes, rough ground etc.)?	
11.	Operation	DUST	Is the Spray Truck required for haul road dust (especially in dry conditions)?	
12.	Operation	DUST	Any build-up of dust or dust generating materials from site on local roads i.e. requirement for brushing and road cleaning?	

ENVIRONMENTAL CHECKSHEET (WEEKLY)				
13.	Operation	DUST / VISUAL	Is Overburden Stockpile planting (grass) healthy? Any requirement for replanting?	
14.				
15.	Operation	WATER	Spill kits are in designated locations? Kits are fully stocked?	
16.	Operation	WATER	All chemicals/oils/lubricants (not in current use) located in a bund? (bund capacity >110% of largest/single vessel and >25% of total stored volume)	
17.	Transport	DUST	Are vehicles leaving site covered and/or sprayed (as appropriate)?	
18.	Transport	DUST	Are vehicle wheels being washed prior to leaving site (sufficient water in wheel wash)?	
19.	Transport	DUST	Are vehicles generally clean prior to leaving site?	
20.	Transport			
21.				
22.				
23.				
24.	Waste		Any litter surrounding the site?	
25.	Waste		Is waste collection area clean and all waste bins closed?	
26.	Waste			
27.	Boundary	DUST	Any evidence of excessive dust build up on vegetation?	
28.	Boundary	DUST / VISUAL	Is boundary planting (grass / trees) healthy? Any requirement for replanting?	

ENVIRONMENTAL CHECKSHEET (WEEKLY)				
29.	Boundary	DUST / VISUAL	Gaps in boundary hedgerows? Any requirement for supplemental planting?	
30.				
31.				
32.				
33.				
34.				

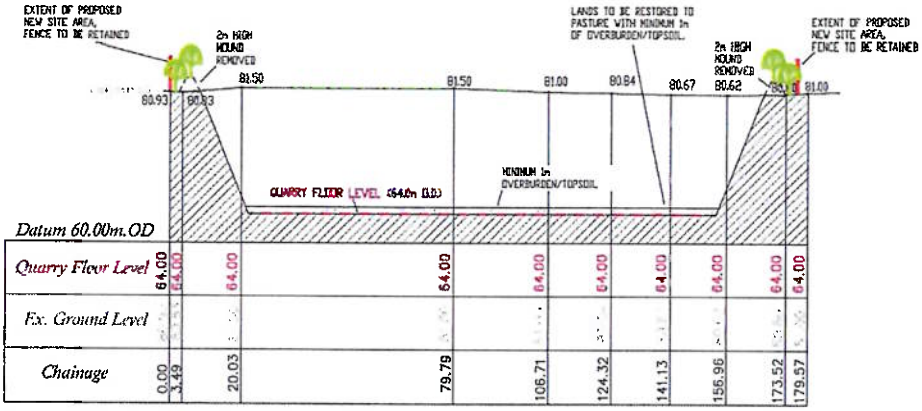
APPENDIX F
COMPLAINTS RECORD FORM

Complaint Report Form	
Time and date of complaint:	Name and address of complainant:
Telephone number of complainant:	

Date of occurrence:	
Time of occurrence:	
Location of occurrence, if not at above address:	
Weather conditions (i.e., dry, rain, fog, snow):	
Temperature (very warm, warm, mild, cold or degrees if known):	
Wind strength (none, light, steady, strong, gusting):	
Wind direction (e.g. from NE):	
Complainant's description of nuisance:	
Detailed description of the nuisance (i.e. where was the nuisance, what does it smell/sound like, duration (time), constant or intermittent in this period, does the complainant have any other comments about the nuisance)	
Are there any other complaints relating to the installation, or to that location? (either previously or relating to the same exposure):	
Any other relevant information:	
Do you accept that the nuisance is likely to be from your activities?	
What was happening on site at the time the nuisance occurred?	
Operating conditions at time the nuisance occurred (e.g. abnormal ETP operations, abnormal deliveries or collections, abnormal waste handling, etc.):	
Actions taken:	

Form completed by:	Date	Signed

APPENDIX G
RESTORATION PLAN DRAWING



Longitudinal Section X-X. Scale 1:1000 horz: 1:500 vert