ATTACHMENT L1 – STATUTORY REQUIREMENTS

COMPLIANCE WITH SECTION 40(4) WASTE MANAGEMENT ACTS 1996-2008

In developing the proposed inert waste recovery scheme, Roadstone Ltd. has had regard to the requirements of Section 40(4) of the Waste Management Acts 1996, as amended. These are addressed as follows: -

a) Any emissions from the recovery or disposal activity in question ("the activity concerned") will not result in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under any other enactment.

As the materials used to backfill and restore the application site are inert and non-biodegradeable, they do not generate leachate or landfill gas. Accordingly, waste recovery activities at the site present only very low risk of groundwater contamination, no risk of landfill gas emissions and no risk of bird, litter, odour or vermin nuisance.

When the waste recovery facility is operational and backfilling / soil recovery activities are progressing, there is a small risk of potential groundwater pollution from the following sources:

- accidental spillage of fuels and lubricants by construction plant placing the inert fill;
- increase in suspended solids and potential for contaminated run-off percolating down to the groundwater table during restoration of the site; and
- inadvertent importation or placement of rogue loads of contaminated material at the site.

In order to minimise the risk of pollution to groundwater occurring as a result of waste recovery activities, a number of mitigation measures are proposed. These measures give effect to Council Directive 80/68/EEC on the protection of groundwater against pollution and are outlined in Attachment E4 of this waste licence application and Chapter 6 of the Environmental Impact Statement.

When the application site was previously operated as a quarry, recorded noise and dust levels from rock extraction and aggregate processing activities were generally within recognised threshold emission limits for extractive industry. Roadstone Ltd. previously implemented its Environmental Management System (EMS) when quarrying at this location. The company envisages that the EMS will also be implemented in respect of proposed soil recovery activities in order to mitigate specific impacts and any emissions which may arise and to apply best practice for environmental management and control at this location.

b) The activity concerned, carried on in accordance with such conditions as may be attached to the licence, will not cause environmental pollution;

The recovery through disposal of inert soil and stones on land is necessary for the backfilling and restoration of the application site and presents little or no risk to the natural environment. The activity will not generate any leachate or landfill gas.

Inert waste testing, inspection and handling procedures will be put in place to ensure that only waste which is demonstrably inert will be used in the backfilling and restoration of this site. Environmental Management Systems will be put in place to minimise the risk of environmental pollution arising in the course of the restoration works.

Roadstone will undertake the backfilling and restoration works at the application site in accordance with all conditions to prevent environmental pollution which may attach to any Waste Licence issued in respect of the proposed recovery facility.

bb) If the activity concerned involves the landfill of waste, the activity, carried on in accordance with such conditions as may be attached on the licence, will comply with Council Directive 1999/31/EC on the landfill of waste.

Not Applicable

c) The best available techniques will be used to prevent or eliminate or, where that is not practicable, to limit, abate or reduce an emission from the activity concerned;.

As the materials recovered at the waste recovery facility are inert, there is little or no risk of potentially contaminated emissions to ground, groundwater or the atmosphere. Consequently, there is little requirement to apply best available technologies to limit, abate and/or reduce ground

and/or groundwater emissions. Emphasis will be placed on implementation of robust waste acceptance and inspection procedures to ensure that only inert soil waste is imported for backfilling and restoration of the quarry.

The proposed backfilling and restoration of the application site will, for the most part, only require utilisation of conventional HGV trucks and earthmoving equipment. Use of this plant and equipment will generate noise and dust emissions. Noise and dust suppression techniques will be employed at the site as and when required (refer to Chapters 8 and 9 of the accompanying Environmental Impact Statement).

cc) *The activity concerned is consistent with the objectives of the relevant waste management plan or the hazardous waste management plan, as the case may be, and will not prejudice measures taken or to be taken by the relevant local authority or authorities for the purposes of the implementation of any such plan.*

Wicklow is one of several counties in the Eastern Midland waste region of Ireland which is covered by the Eastern Midland Waste Management Plan (2015-2021), published by Dublin City Council (the lead Local Authority for the plan) in May 2015.

Section 7.3 of the plan addresses 'priority waste' streams, including construction and demolition waste. It notes an increase in construction related activity during 2014 and emphasises the importance of ensuring that appropriate processing facilities are in place to facilitate increased reuse, recycling and recovery of all C&D waste streams.

Section 11.2.2 of the plan presents an overview of construction and demolition waste management activities within the region. It identifies that in 2012, 41% of all recorded C&D waste collected and managed in the region (1.3 million tonnes of a total of 3.25 million tonnes) comprised inert soil and stones. This volume was generated at a time which corresponded with possibly the lowest point of the downturn in construction related activity following the Global Financial Crisis of 2008.

Section 11.2.2 notes a sharp decrease in the number of operational landfills in recent years. It also highlights growing awareness of the ecological and biodiversity value of low-lying wetlands and marginal agricultural land which were backfilled or reclaimed using construction and demolition wastes in the past and comments that at many of these sites, the primary activity appears to have been deposition of waste rather than land improvement (also known as 'sham recovery'). In view of these trends and the likelihood that fewer of these facilities or sites will be available as outlets for C&D waste than in the recent past, the plan signals that alternative options will need to be provided to facilitate recovery of C&D wastes in the years ahead.

The plan also raises the question as to whether or not the placement of inert waste at many of the infill sites used in the past is an appropriate land use strategy or indeed the best use of a potentially recyclable material, noting that quarries in particular often require large quantities of soil material to fill voids or use it for remediation and/or landscaping purposes.

It is considered in light of the above that the proposed recovery of soil and stone waste in the proposed backfilling and restoration of the existing quarry void at Calary Quarry broadly complies with the policy objectives for C&D waste set out in the current waste management plan for the Eastern Midland Region.

d) *If the applicant is not a local authority, the cooperation of a borough that is not a country borough, or the council or an urban district, subject to subjection (8), he or she is a fit and proper person to hold a waste licence.*

Refer to Attachment L2.

e) *The Applicant has complied with any requirements under Section 53.*

A Closure, Restoration and Aftercare Management Plan (CRAMP) and a fully detailed and costed Environmental Liabilities Risk Assessment (ELRA) for the proposed inert soil waste recovery facility at Calary Quarry are provided under cover of this Attachment L1. These documents assess facility closure costs and the cost of unplanned accidents or emissions in accordance with the requirements and methodologies set out by the EPA publication '*Guidance on assessing and costing environmental liabilities" 2014).*

Roadstone Ltd. will furnish such particulars, and make such financial provisions as may be agreed with the Agency, for future implementation of the proposed closure plan and/or execution of the environmental remediation works provided for under a worst-case scenario in the liabilities risk assessment.

f) Energy will be used efficiently in the carrying on of the activity concerned.

Small scale energy requirements for the existing site office and staff welfare facilities (lighting, heating, computers etc.) will be provided by a connection to the electricity supply network. Plant and equipment required to undertake the proposed waste recovery activities will be powered by diesel fuel. Energy use will be minimised insofar as practicable.

g) Any noise from the activity concerned will comply with, or will not result in the contravention of, any regulations under Section 106 of the Act of 1992.

Noise emissions from HGV's, plant and earthmoving equipment will be controlled and monitored to comply with such limits and conditions as may be imposed by a Waste Licence issued in respect of the proposed restoration works. When previously operated as a quarry, noise emissions at the application site were generally below the recognised threshold average ambient noise level for licensed industries of $55L_{Aeq}$ dB(A). Potential noise impacts arising from the recovery activity have been assessed in accordance with the EPA *Guidance Note for Noise : Licence Applications, Surveys and Assessments in Relation to Scheduled Activities (NG4)* and found to be minor and within permitted limits. Occasional exceedences of noise limits at the quarry, when recorded, were attributed to traffic movement along the R755 Regional Road.

h) Necessary measures will be taken to prevent accidents in the carrying on of the activity concerned and, where an accident occurs, to limit it's consequences for the environment.

An assessment of the principal environmental hazards and risks associated with the proposed backfilling and restoration scheme at Calary Quarry and the contingency measures to be implemented in the event of an incident are provided in the Outline Contingency Plan provided in Attachment J of this waste licence application.

i) Necessary measures will be taken upon the permanent cessation of the activity concerned (including such a cessation resulting from the abandonment of the activity) to avoid any risk of environmental pollution and return the site of the activity to satisfactory state.

Details of the capping, decommissioning and aftercare activities to be undertaken on completion of the site backfilling and restoration works are provided in Attachment K of this waste licence application. As the soil waste materials used to restore the application site are inert, there will be no requirement to make provision for measures to monitor and/or prevent risk of long term pollution arising at this location.

j) The intended method of treatment is acceptable from the point of view of environmental protection, in particular when the method is not in accordance with Section 32(1)

As the waste materials used to backfill and restore the application site at Calary Quarry are inert; as the surrounding bedrock has very low permeability and is categorised as a poor aquifer; as the recovery facility will be operated by a large, well-resourced and experienced company; as it will be operated in accordance with an accredited Environmental Management System (EMS) and an approved waste licence; as imported waste will be subject to prior approval and testing and only brought to site by authorised waste collectors (in possession of valid waste collection permits), it is considered that the proposed waste recovery activity at Calary Quarry presents a very low, almost negligible, risk to the environment and that, as such, it is acceptable from the point of view of environmental protection.

APPROPRIATE ASSESSMENT SCREENING REPORT

An Appropriate Assessment Screening Report in respect of the proposed inert soil waste recovery facility accompanies this attachment.

A Natura Impact Statement / Appropriate Assessment Screening report in respect of the proposed inert soil waste recovery facility at Calary Quarry was prepared by SLR Consulting Ireland and submitted to Wicklow County Council in support of the application for planning permission for the facility (Ref. 16/574). A copy of the screening report accompanies this Attachment L1.

The screening assessment concluded that the establishment and operation of the proposed inert wasete recovery facility at Calary Quarry is not likely to have any adverse effect on the integrity of any Natura 2000 site, or on any of the qualifying features for which these sites have been classified or designated, either as a stand-alone development or in-combination with other plans or projects within its zone of influence.

COMPLIANCE WITH BAT

The following sections describe how the proposed inert soil waste recovery facility at Calary Quarry will comply with the relevant requirements of BAT. In the absence of any specific BAT guidance in respect of the proposed waste recovery activity, it is considered that BAT for this sector is best addressed by the guidance given in the Agency's *BAT Guidance Note for Waste Sector : Landfill Activities (December 2011),* and specifically guidance presented therein in respect of inert waste landfills.

The principal environment impacts associated with the proposed waste recovery activities comprise

(i) Potential dust emissions arising from unloading, placement and compaction of imported soil and trafficking of HGV's over unpaved haul roads;
(ii) Potential carbon dioxide (CO_2) emissions from plant and equipment working at the facility;
(iii) Potential noise emissions / noise nuisance associated with working plant and HGVs;
(iv) Potential contaminant emissions to land, surface waters and groundwater, specifically from placement of non-inert waste, presence of suspended solids in surface water run-off and spills / leaks of fuel and oil;
(v) Potential nuisance associated with transport of mud onto the regional and local road network;
(vi) Inadequate planning and financial provision for potential environmental liabilities, closure, restoration and aftercare of the proposed facility;
(vii) Poor environmental management and control of waste activities at the facility;

The waste materials imported to, managed and recovered at this facility are inert (physically, chemically and biologically unreactive) and will not alter or adversely affect any other matter in contact with it in a way which would give rise to environmental pollution or harm human health. As such, the waste will not generate leachate, landfill gas or odour emissions, nor will it give rise to litter nuisance or attract vermin or birds, which would also create further potential nuisance.

It is considered that each of the potential impacts of the proposed facility can be addressed through the application of the following best available techniques to minimise emissions or to manage / control them.

Air (Dust) Emissions

A number of measures will be put in place to minimise and manage air (principally fugitive dust) emissions at Calary Quarry. The following BAT measures are proposed in respect of potential dust generation activities at the waste recovery facility in order to minimise and control dust emissions:

All Activities

- Using mobile water bowsers to damp down particulate materials across the entire site, as and when required, principally in windy periods during extended dry spells.

Soil Placement and Backfilling

- Damping down particulate materials as and when required;
- Restricting access to areas once they are filled / restored;
- Avoiding soil handling during adverse (dry, windy) weather conditions and optimising timing of any site operations and/or development works;
- Placing and compacting imported soil in-situ immediately after being unloaded (to minimise windblown particulate matter);
- Minimising drop heights at all times (to minimise emissions);

Stockpiling

- Minimising stockpiling of imported soils;
- Use of water sprays on soil stockpiles when necessary;
- Siting of stockpiles to take advantage of shelter from wind;
- Minimising soil mound heights at all times (to minimise emissions);

Traffic Movements

- Requiring traffic to adhere to defined haul routes within the facility;
- Regularly maintaining unpaved road sections by grading hardcore to minimise particulate matter generation;
- Maximising travel over paved road sections within the facility;
- Maximising separation distances between internal haul roads and sensitive receptors;
- Implementing and enforcing speed controls on all paved and unpaved roads;
- Directing traffic through wheel cleaning equipment wherever practicable;
- Using road sweepers on paved road sections as and when required;

Monitoring

- Resumption of dust deposition monitoring at previously established locations around the facility and undertaking reviews of ambient emissions at regular intervals to determine the effectiveness of dust management and control systems.
- Establishment of an additional dust monitoring location (D3) upslope and immediately downwind of the facility.

The BAT Guidance Note for the Waste Sector : Landfill Activities (2011) and the Environmental Management Guidelines for the Extractive Industry (2006), both published by the EPA, indicate that a total dust deposition limit of 350mg/m^2/day is appropriate for the proposed waste recovery facility.

Air (CO_2) Emissions

The proposed backfilling and restoration of the quarry void at Calary Quarry will, for the most part, entail use of conventional diesel powered HGV trucks and earthmoving equipment (mechanical excavators and/or bulldozers). There is only minor scope to increase the efficiency of HGV's, plant and earthworking equipment and to reduce emissions arising from their use and deployment at the proposed recovery facility. The following BAT measures are proposed in order increase efficiency and to limit, abate and/or reduce carbon dioxide emissions generated by HGVs and plant at the waste recovery facility:

- Ensuring all vehicles, plant and equipment based at the facility are regularly serviced and maintained and operating efficiently;
- Replacing plant and/or vehicles at the end of their operational life;
- Ensuring plant and equipment are switched off when not in use;
- Minimising, insofar as possible, vehicle movements across the facility
- Reviewing opportunities to increase the proportion of sustainable biofuel used by HGVs travelling to and from the facility, and incentivising its use wherever practicable.

Noise Emissions

The following BAT measures are proposed in respect of activities at the proposed waste recovery facility in order to minimise and control noise emissions:

Facility Layout / Design

- Retaining / reinforcing screening berms, banks and perimeter vegetation around the property boundary to provide acoustic as well as visual screening;
- Ensuring plant and equipment at the facility work within the existing quarry void, below original ground level or the crest of any perimeter screening berm, in order that quarry faces or berms can be used to provide additional acoustic screening;

Management and Working Practices

- Ensuring activities within the proposed facility are undertaken in locations where noise attenuation from existing natural landforms would minimise the potential noise related impact at nearby noise-sensitive properties;
- Ensuring that, wherever possible, internal haul roads are routed so as to maximise the separation distances to nearby noise-sensitive properties;
- Ensuring all haul roads are kept clean and maintained in a good state of repair (i.e. any potholes would be filled and large bumps removed, to avoid unwanted rattle and "body-slap" from heavy goods vehicles);
- Ensuring heavy goods vehicles entering and leaving the site have tailgates securely fastened;

- Ensuring all mobile plant and equipment used at the facility have noise emission levels that comply with the limiting levels defined in EC Directive 86/662/EEC and any subsequent amendments;
- Ensuring plant is operated in a proper manner with respect to minimising noise emissions (e.g. minimisation of drop heights, no unnecessary revving of engines, plant used intermittently not left idling);
- Ensuring all plant is subject to regular maintenance (i.e. all moving parts kept well lubricated, all cutting edges kept sharpened, the integrity of silencers and acoustic hoods maintained);
- Ensuring all plant and equipment at the facility is fitted with effective exhaust silencers which are maintained in good working order to meet manufacturers' noise rating levels. Defective silencers to be replaced immediately.

Monitoring

- Resumption of noise monitoring at previously established locations around the facility (closest to sensitive receptors) and undertaking reviews of emissions at regular intervals to determine the effectiveness of noise management systems.

The *Guidance Note for Noise in Relation to Scheduled Activities (2007)* and the *Environmental Management Guidelines for the Extractive Industry (2006)*, both published by the EPA, indicate that a rated noise emission limit of 55dB(A) L_{Ar} during daytime working hours and 45dB(A) L_{Ar} during night-time hours is appropriate for the proposed waste recovery facility.

Available baseline noise monitoring surveys and noise analyses in respect of future waste recovery activities indicate that exceedences in these threshold values will not arise on account of the proposed waste recovery activities at Calary Quarry. The available noise monitoring data indicates that where exceedences of threshold noise limits currently occur, or are likely to occur, at this location, they can largely be attributed to the proximity of the monitoring location to the R755 Regional Road.

Emissions to Land / Water

The proposed inert waste recovery facility is located upslope, up-gradient and east of the Killough River, which flows northwards to a confluence with the River Dargle to the south of Enniskerry. Prior to suspension of quarry operations, the water management system at the quarry comprised collection of rainfall run-off and groundwater in the sumps on the quarry floor and pumping it to a series of settlement tanks at a higher level for treatment. An effluent discharge licence issued in December 2009 (Wicklow Co. Co. Ref No. WPL87 and An Bord Pleanála Ref. 27.WW.378) remains in force at Calary Quarry and provides for the discharge of treated trade effluent from an on-site water management system to a tributary of the Killough River.

Since quarrying activities were suspended in 2010, dewatering has been discontinued at Calary Quarry. Natural drainage (principally surface run-off from surrounding sloping ground and rainfall) into the quarry void has caused water levels in the quarry void to gradually rise, from a former floor level of approximately 220mOD to approximately 245mOD. The Killough River receives discharge waters from the existing pond via a concrete pipe at the upper bench level (approximately 245mOD). This pipe connects to a drainage ditch which runs along the side of the R755 Regional Road and the western quarry boundary. This, in turn, flows to the tributary stream of the Killough River.

The bedrocks underlying the application site generally have very low permeability and are categorised as Poor Aquifers (Pl) by the Geological Survey of Ireland. These are bedrocks which are generally unproductive except in local (fractured) zones. Maps published by the EPA indicate that the site is located in an area with high to extreme groundwater vulnerability status. This reflects the potential for rapid groundwater movement through thin (or non-existent) soil cover into the underlying (poor) bedrock aquifer. Previous sampling and testing of groundwater from monitoring wells at Calary Quarry indicates that groundwater quality at the application site is generally good and that previous quarry operations had no significant impact on local groundwater quality.

Although the waste streams to be imported to the proposed soil waste recovery facility at Calary Quarry are inert and expected to be free from contamination, there is a minor risk that the proposed activities could result in contaminant emissions to land, surface waters and groundwater, specifically from placement of non-inert waste, presence of suspended solids in surface water run-off and spills / leaks of fuel and oil. The following BAT measures are proposed in respect of activities at the waste recovery facility in order to minimise uncontrolled release of polluting materials or liquids / liquors to land, surface waters and groundwater:

Land

- Establishing waste acceptance procedures and management systems to identify the source of imported waste materials in advance and to confirm that they are inert;
- Implementing a multi-level soil testing regime for imported waste materials, comprising characterisation testing, compliance testing and on-site verification;
- Ensuring that any imported waste which is suspected to be non-inert is transferred to the proposed waste inspection and quarantine area (a covered shed constructed over a concrete slab at the upper infrastructure area) and held there pending receipt of test results;
- Removing any quarantined materials that prove to be non-inert off-site, for disposal or recovery at and appropriately licensed waste facility.

Water

- Dewatering the quarry void and quarry floor prior to placing inert soil material in order to minimise the mobilisation and migration of fines in groundwater;
- Constructing drainage channels around the edge of the existing quarry to divert it away from the active waste recovery area (if practicable and feasible to do so)
- Collecting surface water run-off from active recovery areas and/or groundwater inflows at sumps within the quarry void and pumping it through settlement pond infrastructure, mobile silt traps and a hydrocarbon interceptor in order to reduce concentrations of suspended solids and remove any potential hydrocarbon contamination prior to discharging it via existing site infrastructure to the tributary stream of the Killough River;
- Ensuring all fuels, oils, lubricants and other potentially hazardous chemicals held at the facility are stored in
  (a) large tanks surrounded by protective concrete barriers / containment bunds in order to eliminate the potential for mobile plant to collide or impact with them;
  (b) smaller drums or intermediate bulk containers (IBCs) on bunded pallets surrounded by protective barriers;
  (c) double skinned containers and/or mobile bowsers.
- Regular visual inspection and testing of the integrity of tanks, drums, bunded pallets and double skinned containers;
- Diverting all domestic wastewater from the staff welfare facilities via the existing septic tanks and wastewater treatment facilities prior to discharging final effluent to ground;
- Ensuring all vehicle re-fuelling is undertaken on the sealed hardstand areas adjacent to the fuel storage tank (or from a mobile double skinned fuel bowser);
- Maintaining and testing the integrity of proposed new drainage infrastructure, including drainage pipework and the hydrocarbon interceptor;
- Undertaking maintenance of plant and machinery over paved surfaces (or off-site, if appropriate);
- Ensuring all plant is regularly maintained and inspected daily for leaks of fuel, lubricating oil or other contaminating liquids / liquors
- Ensuring spill kits (with containment booms and absorbent materials) are available on-site to contain / stop the migration of any accidental spillages, should they occur;
- Establishing a traffic management system at the facility to reduce conflicts between vehicles, and the potential risk of collisions and associated fuel spills or oil leaks;
- Establishing and enforcing speed limits across the facility to further reduce the likelihood and significance of collisions;

Monitoring

- Continued regular monitoring of surface water discharges (at discharge point) and groundwater quality (at 4 No. groundwater wells);
- Undertaking ongoing reviews of emissions at regular intervals to determine the effectiveness of water management systems.

It is expected that by implementing these measures, emissions to surface water will meet the quality threshold values for key indicator parameters (BOD, suspended solids, total ammonia, total nitrogen and total phosphorous set by the *BAT Guidance Note for Waste Sector : Landfill Activities (2011)* and/or existing discharge licence.

Environmental Liabilities

Operation of the proposed waste recovery facility could give rise to both known and potentially unknown future liabilities, principally in respect of land, surface water and/or groundwater and also, to a lesser extent, to atmosphere. Some potential liabilities could also arise in respect of the future closure, restoration and aftercare of the facility. Failure to make adequate financial provision for these liabilities could give rise to adverse impacts on the environment.

In order to identify and quantify these prospective liabilities, Roadstone has prepared a preliminary Closure, Restoration and Aftercare Management Plan (CRAMP) and Environmental Liabilities Risk Assessment (ELRA), copies of which have also been provided with this attachment.

It is envisaged that, subject to the grant of a waste licence in respect of inert soil recovery activities at Calary Quarry and Agency agreement, Roadstone will arrange such financial provision as may be required in respect of these prospective environmental liabilities.

Transport of Mud onto Roads

The proposed backfilling and restoration of the void at Calary Quarry will result in traffic movements of HGV's over areas of unpaved ground within the proposed waste recovery facility and as such, in unfavourable weather conditions, could result in mud being carried off-site and onto the public road network, giving rise to potential health and safety risks to other road uses. The following BAT measures are proposed in order to limit, abate and/or minimise deposition of mud on public roads by HGV's and other vehicles exiting the waste recovery facility.

- Directing all traffic exiting the facility through the proposed wheelwash facility to be installed at the application site and over paved internal roads thereafter out to the public road network;
- Regularly cleaning and maintaining the wheelwash facility;
- Using a road sweeper to ensure local public roads are cleaned as and when required
- Maximising travel over paved road sections within the facility;
- Regularly inspecting and maintaining unpaved road sections within the facility so as to minimise potential accumulation of mud on wheels of HGV lorries.

Environmental Management Systems

Roadstone Ltd. previously implemented its Environmental Management System (EMS) in respect of rock extraction and aggregate production activities at Calary Quarry. In recent years, it has extended its EMS to incorporate waste recovery activities at a number of locations across the State.

Roadstone proposes to implement and update its existing EMS in due course to incorporate any additional mitigation measures and management procedures (outlined above) which may be necessary at Calary Quarry to

(i) mitigate specific impacts and emissions arising from the proposed waste recovery activities and
(ii) implement best practice for environmental management and control of the waste activities at the site.

An environmental monitoring programme was previously in place at the application site when it was operated as a quarry. Should planning and waste licensing approval be granted in respect of the proposed waste recovery at Calary Quarry, it is envisaged that the environmental monitoring programme which was previously in place will be re-established for the duration of the proposed waste recovery operations. It is expected that emission limit values for the recovery activity will generally be consistent with those set by previous and/or existing planning permissions and discharge consents for the site.

The environmental management measures and BAT techniques outlined above will be reviewed and revised in light of conditions attaching to any waste licence issued by the EPA for inert waste recovery activities at this location.

CONSIDERATIONS IN ANNEX IV OF COUNCIL DIRECTIVE 96/61/EC

In developing the proposed restoration scheme, Roadstone Ltd. has considered the requirement to use Best Available Techniques, where possible and practicable. The considerations referred to in ANNEX IV of Council Directive 96/61/EC on Integrated Pollution Prevention and Control are addressed as follows :

1. *The use of low waste technology*

   The proposed backfilling and restoration of the application site will, for the most part, only require utilisation of conventional HGV trucks and earthmoving equipment. As the materials used to restore the site are inert, there is little scope to apply best available technologies to limit, abate and/or reduce emissions. In controlling emissions from the site, greatest emphasis will be placed on implementing an effective Environmental Management System.

2. *The use of less hazardous substances.*

   No hazardous or non-hazardous materials (other than diesel fuel and engine oils) will be used in restoring the application site. There is currently no alternative to diesel fuel to power the earthmoving equipment which will be in use at the facility.

3. *The furthering of recovery and recycling of substances generated and used in the process and of waste, where appropriate.*

   Given that the waste materials imported to the proposed recovery facility are effectively re-used for a beneficial purpose, and in place of naturally occurring non-waste materials, there is no scope for further material recovery and/or recycling.

4. *Comparable processes, facilities or methods of operation which have been tried with success on an industrial scale.*

   No alternative successful soil recovery activities are known of.

5. *Technology advances and changes in scientific knowledge and understanding*

   No alternative soil recovery technologies are known.

6. *The nature, effects and volume of the emissions concerned*

   As the materials imported and recovered at the proposed facility are inert, there will be no potentially contaminated emissions to ground, groundwater and/or the atmosphere. Noise and dust emissions will be controlled and monitored to comply with such limits and conditions as may be imposed by a Waste Licence issued in respect of the proposed backfilling and restoration works.

7. *The commissioning dates for new or existing installations*

   There are only a small number of authorised soil recovery facilities currently in operation in Counties Dublin, Meath, Kildare and Wicklow. Roadstone has recently completed backfilling of its quarry at Fassaroe, approximately 7km to the north of the application site, and is seeking to establish the recovery facility at Calary Quarry as a replacement for it.

   Soil waste recovery facilities operate in a commercial environment and are currently struggling to meet the demand for soil recovery generated by the recent uplift in activity in the construction and development sectors around the Greater Dublin Area. Most existing authorised soil recovery facilities are regulated by means of Local Authority waste facility permits, which typically have a finite volumetric capacity (typically <25,000 tonnes intake per annum and limited to 100,000 tonnes intake in total). Additional well managed, large scale authorised (licensed) facilities are required to replace closed or closing facilities and to provide the required additional recovery capacity for a growing construction and development sector.

8. *The length of time needed to introduce the best available technique*

   As previously noted, the materials recovered at the application site are inert and recovery activities employ conventional, relatively low technology plant and equipment. As such there is little scope or requirement to develop new waste management technologies or techniques to provide enhanced environmental protection.

9. *The consumption and nature of raw materials (including water) used in the process and their energy efficiency*

   The only materials consumed by waste recovery activities at the application site are diesel fuel and engine oils used to power plant and equipment. No other hazardous or non-hazardous materials will be required on site. The relatively small energy demands generated by the proposed site office and staff welfare facilities (lighting, heating etc) will be addressed by way of a connection to the local electricity distribution network. Energy use will be minimised insofar as practicable.

10. *The need to prevent or reduce to a minimum the overall impact of the emissions on the environment and the risks to it.*

    As previously noted, the waste materials recovered at the proposed recovery facility are inert. The risk of potentially contaminated emissions to ground, groundwater and the atmosphere are therefore very low. Emissions of noise and dust will be controlled and kept to a minimum during the site restoration works by applying best practice environmental management techniques.

Calary Quarry, Kilmacanogue, Co. Wicklow

Proposed Inert Soil Recovery Facility
And Backfilling of Calary Quarry

Appropriate Assessment: Stage 1 Screening Assessment

SLR Ref: 501.00180.00109.3

May 2016

Version No: 1

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TABLES

DRAWINGS

1.0 INTRODUCTION

1.1 Background

This report presents an Appropriate Assessment : Stage 1 Screening Assessment to identify any likely significant effects on Natura 2000 sites from the proposed development and operation of an inert waste recovery facility to facilitate the proposed restoration of an existing quarry void by backfilling it to former ground level using imported inert soil and stone at Calary Quarry in Killough Upper, Kilmacanogue, Co. Wicklow.

The assessment has been prepared by SLR Consulting Ireland (SLR) on behalf of Roadstone Limited in support its planning application and waste licence application (WLA) for the restoration and backfilling of Calary Quarry.

1.2 Appropriate Assessment Overview

The requirements for an Appropriate Assessment are set out under Article 6 of the EU Habitats Directive (92/34/EEC), transposed into Irish law through The European Communities (Birds and Natural Habitats) Regulations 2011 and 2013. These regulations require a Competent Authority to make an Appropriate Assessment of the implications for Natura 2000 sites and their conservation objectives, before deciding to undertake, or give consent, permission or other authorisation for, a plan or project which:

i. is not directly connected with or necessary to the management of that site; and
ii. is likely to have a significant effect thereon, either individually or in combination with other plans and projects.

The European Commission's methodological guidance[1] promotes a four stage process, as set out below, to complete an Appropriate Assessment:

- Stage 1 – Screening for Appropriate Assessment;
- Stage 2 – Appropriate Assessment;
- Stage 3 – Alternative Solutions; and
- Stage 4 – The 'IROPI Test' (Imperative Reasons of Overriding Public Interest).

A person applying for any such consent, permission or other authorisation must provide such information in Stage 1, as the Competent Authority may reasonably require, for the purposes of the assessment or to enable them to determine whether an Appropriate Assessment is required.

In considering whether a plan or project will adversely affect the integrity of any Natura 2000 site or sites, the Competent Authority should consider whether the effects of the proposal on the site or sites, either individually or in combination with other plans or projects, is likely to be significant in terms of the conservation objectives and in respect of each interest feature for which the site was designated a Special Area of Conservation (SAC) under Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive), or classified a Special Protection Area (SPA) under Council Directive 2009/147/EC on the Conservation of Wild Birds (The Birds Directive) that codifies Directive 79/409/EEC.

[1] European Communities (2002). *Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites. Methodological Guidance on the Provision of Article 6(3) and (4) of the Habitats Directive 92/43/EEC*. European Communities, Luxembourg.

In the light of the conclusions of the assessment, and in consideration of Imperative Reasons of Overriding Public Interest (IROPI), the Competent Authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the Natura 2000 site.

1.3 Purpose of this Report

This report has been produced to provide a screening statement, as required under Stage 1 of the Appropriate Assessment process, and includes all relevant information to the Competent Authority (in this case Wicklow County Council / Environmental Protection Agency) in order for each to determine whether the proposed inert soil recovery facility at Calary Quarry and the restoration and backfilling of the existing quarry void is likely to have a significant effect on the integrity of any Natura 2000 site, or sites, within its zone of influence and whether there is a requirement for an Appropriate Assessment (Stage 2 Assessment) to be undertaken.

1.4 Ecologist and Experience

The Screening Assessment has been conducted by Steve Judge, an Associate Ecologist with 14 years' experience in ecological consultancy and a member of the Chartered Institute of Ecology and Environmental Management (CIEEM). All work produced is subject to technical review and Quality Assurance.

2.0 METHODOLOGY

2.1 Baseline Data Collection

Baseline information was gathered through a combination of

- desk-based study,
- site visits and inspections made on 10th February, 20th March and 16th April 2015 and
- technical assessments consistent with current standard methodologies and published best practice guidelines,

in order to provide relevant data to allow an assessment of likely significant effects of the proposed inert soil recovery facility at Calary Quarry and the restoration and backfilling of the existing quarry void using imported soil and stone on any individual Natura 2000 site, or sites, within the zone of influence of this project.

The principal source of information on Natura 2000 sites and key qualifying features used in compiling this report was publically accessible information obtained from the website of the National Parks and Wildlife Service (NPWS)[2] and other relevant sources which provide data on current baseline conditions at the site of the proposed development and within its potential zone of influence.

2.2 Assessment Likely Significant Effects

Under the Habitat Regulations, the first test that has to be considered is whether the development, either alone or in combination with other relevant projects and plans, would be likely to have a significant effect. Effects are judged to be significant where they affect the integrity of the site with respect to the conservation objectives of the features for which a Natura 2000 site was designated / classified as being of European importance.

The purpose of a Stage 1 assessment is firstly to screen out those aspects of the proposal that can be considered not likely to have a significant effect, and secondly to screen the key qualifying features of the designation that are not likely to be significantly affected by the project.

In order to undertake an appropriate screening, the guidance produced by the NPWS in 2009[3] has been followed in order to:

- characterise the potential impacts to the qualifying interests of any Natura 2000 site or sites that may result from the proposed project at Calary Quarry;
- assess the likely significance of potential impacts on the qualifying interests of any Natura 2000 site or sites within the zone of influence of the proposed project; and
- assess the risk of an adverse effect on the integrity of the site or occurring to a qualifying interest feature for which the site is of European interest.

The methodology for the assessment of impacts is derived from the guidelines published by the Chartered Institute of Ecology and Environmental Management (CIEEM)[4]. Impacts are characterised in terms of whether specific hazards emanating from the project are likely to have potential significant effects on the integrity of a defined ecosystem and/or conservation

[2] http://www.npws.ie

[3] NPWS (2009 revised February 2010). *Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities*. Department of the Environment, Heritage and Local Government, Dublin.

[4] Institute of Ecology and Environmental Management (2006). *Guidelines for Ecological Impact Assessment in the United Kingdom*.

status of individual habitats or species for which a site is of European interest, and on the site as a whole.

2.3 Ascertaining the Threat to Site Integrity

The Competent Authority will be required to determine whether the operation of an inert soil recovery facility at Calary Quarry and the restoration and backfilling of the existing quarry void would adversely affect the integrity of any Natura 2000 site, or sites, in light of the conservation objectives for that particular site or sites. The integrity of a site is defined as:

> *"The integrity of a site is the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was designated / classified."*

Further to the above, an adverse effect on integrity can also be defined as one that is likely to prevent the site from making the same contribution to favourable conservation status for the relevant features as it did at the time of its designation / classification.

3.0 DESCRIPTION OF THE PROJECT

3.1 Location and Setting

The site of the proposed project is located at an existing quarry on the lower western slope of the Great Sugar Loaf Mountain, in the townlands of Killough Upper and Glencap Commons North, approximately 2.3km south west of Kilmacanogue village and 4.4km south of Enniskerry, Co. Wicklow, as shown on Figure 1.

The application site for the proposed project covers approximately 8.6 hectares (ha) out of total landholding of 25.45ha. The application site comprises a deep, steep-sided quarry void that has gradually become flooded since the cessation of dewatering operations in 2010.

The landscape surrounding the quarry is dominated by the Great Sugar Loaf Mountain, an outcrop of rock rising to 501mAOD to the east of the application site. The Wicklow Mountains to the west of the quarry are separated from it by the steep-sided river valleys of the Killough and Dargle Rivers. The mountain areas typically comprise open heathland / upland grassland mosaics whilst the river valleys comprise farmland predominantly under permanent pasture, interspersed by blocks of semi-natural broadleaved woodland, coniferous plantation woodland and scrub on the steeper valley slopes. Small rural settlements and properties are scattered along the public roads and rural lanes which traverse the local landscape.

3.2 Outline Description of Project

The project involves the development and operation of an inert soil recovery facility which will facilitate the restoration and backfilling of Calary Quarry using imported inert soils, stone and minor quantities of virgin aggregate (for haul road construction).

The planning application seeks permission for the following:

- the importation and recovery of up to 3,300,00 tonnes (1.83 million cubic metres) of inert soil and stone and minor quantities of recovered construction and demolition waste to backfill / infill the existing quarry void to a final ground profile of approximately 290mOD on the eastern side of the quarry to approximately 250mOD on its western side;
- construction of a dedicated waste inspection and quarantine shed and provision of in-site storage container and
- associated ancillary infrastructure (to include list site offices and welfare facilities, weighbridge, car parking, fuel storage facilities, site drainage and on-site water management and treatment systems).

It is anticipated that the backfilling operations and restoration of Calary Quarry would take in the region of 10 to 12 years to complete.

The site will operate from 06:00 to 18:00hrs Monday to Friday and 08:00 to 14:00 on Saturday. No operations will take place outside these times or bank holidays.

The project is anticipated to generate an average daily total (AADT) of 12 heavy goods vehicle (HGV) movements in and out of the site per hour through the importation of inert soil and stone wastes. The main route to and from the proposed facility will be along the R755 Regional to Junction 8 of the N11 National Primary Road at Kilmacanogue.

The quarry void will be de-watered prior to receiving any imported waste materials. All water will be discharged via the existing discharge point to the Killough River, in compliance with the conditions attaching to an existing discharge licence issued by Wicklow County Council on 7th October 2008 (Ref. No. WPL87). Before the commencement of any dewatering operations however, new settlement ponds and a hydrocarbon interceptor will be installed at the application site to treat any run-off before its discharge off-site.

Once operational, all incidental rainfall, surface water run-off and minor groundwater inflow volumes will be allowed to naturally recharge into the ground or directed into sumps where it will be discharged from the application site in compliance with the terms of the existing discharge licence (though these would be superseded by any waste licence issued by the EPA).

Full details of the proposed development are provided within in Chapters 1 and 2 of the Environmental Impact Assessment submitted in support of the proposed project.

4.0 NATURA 2000 SITES

There are a total of 12 Natura 2000 sites within a 15km radius of the project site at Calary Quarry. These sites are listed Table 1 and their locations in relation to the project site shown in Figure 1.

Table 1 : Natura 2000 Sites within a 15km of the Project Site

Natura 2000 Site	Site Code	Location at Closest Point to Project Site
Glen of the Downs SAC	000719	2.3km south east
Wicklow Mountains SPA	004040	2.5km west southwest
Wicklow Mountains SAC	002122	3.2km west
Knocksink Wood SAC	000725	4.6km north
Carriggower Bog SAC	000716	4.6km south
Bray Head SAC	000714	5.2km east northeast
Ballyman Glen SAC	000713	5.4km north
The Murrough Wetlands SAC	002249	8.7km south east
The Murrough SPA	004186	9.5km south east
Rockabill to Dalkey Island SAC	003000	11.6km north northeast
Dalkey Islands SPA	004172	13.7km north northeast
Glensamole Valley SAC	001209	14.7km north west

4.1 Potential Zone of Influence of Project and Screening of Natura 2000 Sites

Based on the size and nature of the proposed project at Calary Quarry, it is considered that the maximum distance for which the project should be evaluated in terms of Natura 2000 sites is up to a maximum radius of 2km from the application site, unless, there are any potential source-pathway-receptor links between the proposed project and any Natura 2000 site(s) outside this distance.

At a distance greater than 2km, and in the absence of any potential source-pathway-receptor link, it is considered that no Natura 2000 sites would be would be affected by any direct loss of habitat or impacted by any effects arising from disturbance (i.e. noise, vibration and human and visual disturbance), the effects of dust deposition or traffic emissions.

The Killough River, which would directly receive any approved discharge from dewatering of the existing flooded quarry void or any surface water run-off / groundwater inflow arising during the operation of inert soil recovery facility and the Glencree River do not flow through, or have any hydrological connectivity with any Natura 2000 sites.

Based on the above, it is considered that all of the following Natura 2000 sites can be screened out from any further assessment at this stage, as there will be no source-pathway-receptor link between the project and these Natura 2000 sites:

- Glen of the Downs SAC;
- Wicklow Mountains SAC;
- Knocksink Wood SAC;
- Carriggower Bog SAC;

- Bray Head SAC;
- Ballyman Glen SAC;
- The Murrough Wetlands SAC;
- The Murrough SPA;
- Rockabill to Dalkey Island SAC;
- Dalkey Islands SPA; and
- Glensamole Valley SAC.

At a distance of 2.5km from the proposed project site, it is considered that there is the possibility of connectivity between Calary Quarry and the qualifying birds species for which the Wicklow Mountains were classified as a SPA. This is based on the distance these species may travel beyond the boundary of the SPA. Therefore the Wicklow Mountains SPA is deemed as relevant and screened-in as part of this assessment.

4.2 Wicklow Mountains SPA

4.2.1 Site Description

Wicklow Mountains SPA (covering c.30,027ha) is an extensive upland site dominated by blanket bog, heath and upland grassland, but which also contains some native oak woodland. These habitats support good examples of upland and woodland bird communities.

4.2.2 Qualifying Interests

The Wicklow Mountains qualify as a SPA under Article 4 of the Birds Directive because they regularly supports populations of European importance including:

- Merlin (*Falco columbarius*); and
- Peregrine (*Falco peregrinus*).

4.2.3 Conservation Objectives

The overarching conservation objective for the Wicklow Mountain SPA is to maintain or restore the favourable conservation status of a bird species of Special Conservation Interest for this SPA[5].

The favourable conservation status of a species is achieved when:

- the population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats; and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future; and
- there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

4.2.4 Site Vulnerabilities

The site vulnerabilities, including any key pressures or trends within and around the Wicklow Mountains SPA, taken from the Natura 2000 Standard Data Form for this site, that have been identified as impacting upon the site, may be summarised as:

[5] NPWS (2015). *Conservation Objectives for Wicklow Mountains SPA [004040].* Generic Version 4.0. Department of Arts, Heritage & the Gaeltacht.

- agriculture:
  - grazing,
- sylviculture, forestry,
- mining, extraction of materials and energy production:
  - peat extraction,,
- transportation and service corridors:
  - paths, tracks, cycling tracks.
- human intrusions and disturbance:
  - walking, horse-riding and non-motorised vehicles.

5.0 HAZARDS AND POTENTIAL EXPOSURE (SCREENING ASSESSMENT)

This section identifies the potential hazards (i.e. the pathways) through which the proposed project could affect the interest features of the Wicklow Mountains SPA and whether the exposure to a particular hazard is likely to have a significant effect as a stand-alone project.

The main purpose of this stage is to screen out those aspects of the project that can be considered not likely to have a significant effect, as well as those qualifying features of the Wicklow Mountains SPA that are not likely to be significantly affected from the exposure to a potential hazard and/or pathway. This is essentially a risk assessment to decide whether a more detailed assessment is required, and if so, the scope of the issues and features to be addressed. If it cannot be concluded with confidence that adverse effects are unlikely, then under the precautionary principle, it is assumed that the issue requires more detailed consideration.

Significant effects are defined in terms of changes to the baseline conditions of one or more the qualifying interest features for which the Wicklow Mountains SPA was classified as being of European importance, whether negative or positive, and which are likely to be directly and indirectly attributable to the proposed project at Calary Quarry, as a stand-alone project.

5.1 Hazard Identification and Potential Exposure

To assess the connectivity of Calary Quarry with the qualifying birds species of merlin and peregrine for which the Wicklow Mountains SPA is of European importance, guidance published by Scottish Natural Heritage (SNH)[6] has been used to determine the core ranges for these species.

Table 2 provides a summary of an initial screening of potential connectivity between Calary Quarry and the qualifying bird species of the Wicklow Mountains SPA. Please note that for the purpose of this screening exercise, the distances have been measured from the boundary of the SPA and not from any recorded individual nesting sites for the relevant species which are at a greater distance from the quarry than the boundary of the SPA.

Table 2: Assessment of Potential Connectivity between Calary Quarry and Wicklow Mountains SPA

	Receptor	Core Ranges	Potential Connectivity with Calary Quarry
Distance Between Alternative Nest Sites	Merlin	Generally 500m, but can be up to 1.5km	No connectivity and screened out
	Peregrine	Mean distance of 3km and maximum distance of 6.5km	Potential connectivity and screened in
Foraging Range From Nest Site During Breeding Season	Merlin	Within 5km	Potential connectivity and screened in
	Peregrine	Core range of 2km	No connectivity and screened out

[6] Scottish Natural Heritage (2013). *Assessing Connectivity with Special Protection Areas (SPAs).* Scottish Natural Heritage.

A review of the potential hazards, based on the scale and nature of the project and on the potential connectivity with the Wicklow Mountains SPA, that might affect the interest features for which this Natura 2000 site was classified, has identified the following potential hazards and which are carried forward for further assessment in Section 6:

- direct loss of potential peregrine alternative nesting site;
- loss, damage, disturbance and fragmentation of potential merlin foraging habitat; and
- noise and visual disturbance.

6.0 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS OF PROJECT

6.1 Direct Loss of Potential Peregrine Alternative Nesting Site

6.1.1 Peregrine Breeding Sites within the Wicklow Mountains SPA

The Wicklow Mountains currently holds 20 known breeding sites for peregrines with a further 20 confirmed breeding sites in Co. Wicklow. The peregrine population is considered stable but monitoring has shown that fluctuates which appears to be linked with weather conditions during the period when eggs are young hatching.

Peregrines in Wicklow are site faithful and tend to re-use traditional sites each year, although there may be alternative nesting ledges at any particular site which birds may move between.

There are no known peregrine nesting sites within the mean core distance of 3km of Calary Quarry. The nearest recorded site is at the cliffs at Powerscourt lying outside the Wicklow Mountains SPA at a distance of 3.3km from Calary Quarry. Other confirmed breeding sites in proximity to Calary Quarry include Raven's Glen at over 5km, North East Bray head site at 6.5km and Ballyvolan at over 11km.

6.1.2 Status of Peregrine at Calary Quarry

As far as can be ascertained, there have been no historical records of peregrines breeding at Calary Quarry.

The exposed rock faces at Calary Quarry were assessed as providing suitable nest-sites for peregrine on the initial site visit made in February 2015. Based on this assessment, three further site visits were made to the site on 20th March, 16th April 2015 and 19th May 2015 to record any signs of occupation by this species. During each visit, a minimum of three hours of observation was undertaken to identify any peregrines at the quarry site or flying over adjacent areas, indicating potential territory occupancy by this species.

On 20th March 2015, a male peregrine was recorded calling from a ledge on the eastern quarry wall and confirmed territorial occupation of Calary Quarry. In addition, two further peregrines were observed flying over the land to the east of the quarry site, on the lower slopes of the Great Sugar Loaf Mountain.

No peregrines were recorded as present or any evidence found to indicate nesting on 16th April 2015 or 19th May 2015.

6.1.3 Assessment of Effects on Peregrine

The backfilling of the quarry void will result not result in any loss of any confirmed site used for breeding purposes by peregrines. As quarry at Calary has not been or is currently used for breeding by peregrines then no effects are predicted on the population status of this species at the Wicklow Mountains SPA and wider surrounding area as result of the proposed project.

Table 3: Summary of Assessment of Significance of Loss of Peregrine Alternative Nesting Site in Light of Conservation Objectives for this Species

Conservation Objectives	Assessment of Significance in Light of Conservation Objectives
Population dynamics data on the peregrine indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats.	No likely significant effects predicted
The natural range of peregrine is neither being reduced nor is likely to be reduced for the foreseeable future.	No likely significant effects predicted
There is, and will probably continue to be, a sufficiently large habitat to maintain the peregrine population on a long-term basis	No likely significant effects predicted

6.2 Habitat Loss, Damage, Disturbance and Fragmentation of Potential Merlin Foraging Habitat

The habitat requirements for merlin are wide open areas, with an abundance of small birds to hunt and are often typically associated with open moorland which provides suitable foraging and ground nesting habitat but which may also utilise abandoned corvid nests in trees.

Calary Quarry is assessed as providing low quality foraging opportunities for merlin, with the habitats not supporting the abundance of small birds for prey, and the site being too confined by the quarry walls to provide optimum conditions for this species to chase its prey.

Given the availability of alternative and extensive higher quality foraging habitat in the wider surrounding area, and particularly on the Great Sugar Loaf Mountain, it is considered that the loss of 8.6a of low quality foraging habitat at Calary Quarry will not have any effects on the distribution, or on the status, of the local population in light of conservation objectives for this species (Table 4).

Table 4: Summary of Assessment of Significance of Loss of Potential Merlin Foraging Habitat in Light of Conservation Objectives for this Species

Conservation Objectives	Assessment of Significance in Light of Conservation Objectives
Population dynamics data on the merlin indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats.	No likely significant effects predicted
The natural range of merlin is neither being reduced nor is likely to be reduced for the foreseeable future.	No likely significant effects predicted
There is, and will probably continue to be, a sufficiently large habitat to maintain the merlin population on a long-term basis	No likely significant effects predicted

6.2.1 Effects of Noise and Visual Disturbance on Peregrine and Merlin

It is recognised that assessing the impacts of disturbance to birds is difficult and that there are no environmental standards that can be applied for birds, unlike for human beings. There has been a wide range of studies into disturbance and its consequences for birds, but the responses by individual and groups of birds is complex and can be dependent upon a number of environmental variables as well as between individual sites. However, it is generally accepted that noises of 70dB (likely disturbance threshold for many bird species) or greater can have an impact on bird species at a distance of up to 300m from its source, for high level and discontinuous disturbance.

Certain species of birds are likely to be more vulnerable to noise and visual disturbance than others. Analysis of the responses of certain bird species to disturbance has found that passive, low-level and continuous disturbance is likely to lead to habituation by birds to such disturbance, whereas active, high level and discontinuous disturbance is likely to lead to the displacement of some bird species from the area, except for only the very tolerant species[7].

Under AQTAG09[8], where specific noise from industry, or industrial related activity, measured at the habitat / nest site is below the levels of 55dB LAeq,1hr, it is considered unlikely that it will have an adverse impact.

A noise assessment carried out as part of the Environmental Impact Assessment predicts that there will be no changes in existing ambient noise levels as a result of the operation of the inert soil recovery facility and backfilling of the quarry void at Calary. It also predicts that the resultant $L_{Aeq,1hr}$ noise levels on the Great Sugar Loaf Mountain would be at 48dB.

The operation of the inert soil recovery facility and backfilling of the quarry void will increase noise level within the quarry site itself, which is likely to have an impact on this area of territory used by peregrines. However, this species has shown that it can become inured to the effects of a certain degree of human disturbance, with peregrines often occupying and nesting in active quarries and urban areas. It is very unlikely therefore that the levels of disturbance generated at the application site would significantly change the territorial behaviour or would affect the distribution and status of the local peregrine population.

With no changes predicted in disturbance to the areas adjacent the quarry site and with noise levels predicted to be at 48dB on the Great Sugar Loaf Mountain, it is assessed that any peregrines and/or merlins with territories extending across wider surrounding areas will already be somewhat habituated to the existing ambient noise levels and no effects on the distribution or on the status of the local population in light of conservation objectives for these species are predicted (Table 5).

[7] Hockin, D., Ounsted, M., Gorman, M., Hill, D., Keller, V. And Barker, M.A. (1992). *Examination of the Effects of Disturbance on Birds with Reference to its Importance in Ecological Assessments.* Journal of Environmental Management Vol 36 pp 253-286.

[8] Ormerod, L., Goodlad, N. and Horton, K. (2005) A*QTAG09 – Guidance on the Effects of Industrial Noise on Wildlife*. Air Quality Technical Advisory Group.

Table 5: Summary of Assessment of Significance of Disturbance on Peregrine and Merlin in Light of Conservation Objectives for these Species

Conservation Objectives	Assessment of Significance in Light of Conservation Objectives
Population dynamics data on the peregrine and merlin indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats.	No likely significant effects predicted
The natural range of peregrine and merlin is neither being reduced nor is likely to be reduced for the foreseeable future.	No likely significant effects predicted
There is, and will probably continue to be, a sufficiently large habitat to maintain the peregrine and merlin population on a long-term basis	No likely significant effects predicted

6.3 Summary of Screening Assessment

Based on the assessment above, it is assessed that the proposed development and operation of an inert soil recovery facility at Calary Quarry to facilitate the restoration and backfilling of an existing quarry void using imported inert soil and stone, will not have any stand-alone significant effects on the Wicklow Mountains SPA or on any of the qualifying bird species for which this site has been classified as being of European importance. It is therefore considered that no further assessment is required for the proposed project at Calary Quarry as a stand-alone project.

7.0 AVOIDANCE AND MITIGATION

As no effects are predicted on any Natura 2000 sites no specific avoidance and mitigation measures are proposed in respect of this project over and above those measures included within the overall scheme design.

However, Roadstone Limited will ensure the operation of the inert soil recovery facility and backfilling operations at Calary Quarry will be undertaken in accordance with "best practice" and appropriate guidelines, for example the Department of the Environment, Heritage and Local Government (DoEHLG) Quarries and Ancillary Activities – Guidelines for Planning Authorities[9], the EPA's Environmental Management in the Extractive Industry guidelines[10] and the Irish Concrete Federation (ICF) Environmental Code[11], and in a sensitive manner and with all due regard to current legislation in respect to the Wicklow Mountains SPA and its qualifying bird species especially in regards to the peregrine falcon.

[9] Department of the Environment, Heritage and Local Government (2004). *Quarries and Ancillary Activities – Guidelines for Planning Authorities*. DoEHLG.

[10] Environmental Protection Agency (2006). *Environmental Management Guidelines – Environmental Management in the Extractive Industry (Non-Scheduled Minerals*. EPA, Wexford.

[11] The Irish Concrete Federation (2005). *Environmental Code. 2nd Edition*. ICF, Dublin.

8.0 IN-COMBINATION ASSESSMENT

It is a requirement of The European Communities (Birds and Natural Habitats) Regulations 2011 that, when considering whether a plan or project will adversely affect the integrity of a Natura 2000 site that it must take into account in-combination effects with other current or reasonably foreseeable plans and projects.

There is no single agreed method for addressing the issue of in-combination effects, however, current practice and available guidance suggests a staged approach, which takes into account the following:

i. if it can be clearly demonstrated that the plan or project will not result in any effects at all that are relevant to the integrity of a Natura 2000 site, then the plan or project should proceed without considering the in-combination test, further; or
ii. if there are identified effects arising from the plan or project, even if they are perceived as minor and not likely to have a significant effect on the integrity of a Natura 2000 site alone, then these effects must be considered 'in-combination' with the effects arising from other plans and projects.

From the screening assessment undertaken here, it is considered that it can be clearly demonstrated that proposed development and operation of an inert soil recovery facility at Calary Quarry to facilitate the restoration and backfilling of an existing quarry void using imported inert soil and stone will not have any effects on any Natura 2000 site as a stand-alone project. Therefore it is considered that there is not a requirement in this case to undertake any further assessment in-combination with other plans and projects.

9.0 SUMMARY AND CONCLUSIONS

This assessment has considered the potential effects associated with the proposed development and operation of an inert soil recovery facility for the restoration and backfilling of Calary Quarry on Natura 2000 sites within a 15km radius.

The assessment has concluded that the development and operation of the recovery facility and the backfilling of the quarry void will have no effect on the integrity of any Natura 2000 site, or on any of the qualifying habitats and/or species for which a site has been designated or classified as being of European importance, either as a stand-alone development or in-combination with other plans or projects.

Based in the findings from this assessment, it is considered there is not a requirement to proceed to a Stage 2 Natura Impact Assessment for the development and operation of the proposed inert soil recovery facility at Calary Quarry which will facilitate its restoration and backfilling to former ground level using imported soil and stone.

9.1 Natura Impact Statement –Summary

A summary of the NIS and findings of no significant effects in line with the methodology set out in the *'Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites. Methodological Guidance on the Provision of Article 6(3) and (4) of the Habitats Directive 92/43/EEC'* is provided in Table 6.

Table 6: Finding of No Significant Effects Report

Name of project or plan	Inert Soil Recovery Facility at Calary Quarry, Kilmacanogue, Co. Wicklow.
Name and location of Natura 2000 site(s)	The following sites lie within a 15km radius of the proposed project site: • Glen of the Downs SAC [000719], 2.3km south east at closest point; • Wicklow Mountains SPA [004040], 2.5km west southwest; • Wicklow Mountains SAC [002122], 3.2km west; • Knocksink Wood SAC [000725], 4.6km north; • Carriggower Bog SAC [000716], 4.6km south; • Bray Head SAC [000714], 5.2km east northeast; • Ballyman Glen SAC [000713], 5.4km north; • The Murrough Wetlands SAC [002249], 8.7km south east; • The Murrough SPA [004186], 9.5km south east; • Rockabill to Dalkey Island SAC [003000], 11.6km north northeast; • Dalkey Islands SPA [004172], 13.7km north northeast; and • Glensamole Valley SAC [001209], 14.7km north west. Based on the size and nature of the proposed project it is considered that the maximum potential zone of influence, in the absence of any source-pathway-receptor link, would be up to a 2km radius of the project site. All of the above sites are considered to lie outside the potential zone of influence of the proposed project, based on a 2km radius around the application site, with no potential environmental pathways linking the project site to any of these Natura 2000 sites, with the exception of Wicklow Mountains SPA.

	At a distance of 2.5km from the proposed project site, it is considered that there is the possibility of connectivity between Calary Quarry and the qualifying birds species for which the Wicklow Mountains were classified as a SPA. This is based on the distance these species may travel beyond the boundary of the SPA. Therefore the Wicklow Mountains SPA is deemed as relevant and screened-in as part of this assessment.
Description of the project/plan	The project involves the development and operation of an inert soil recovery facility to backfill the quarry void at Calary Quarry using imported inert soils, stone and minor quantities of recovered construction and demolition waste. The planning application seeks permission for the following: • the importation and recovery of up to 3,300,00 tonnes (1.83 million cubic metres) of inert soil and stone and minor quantities of recovered construction and demolition waste to backfill / infill the existing quarry void to a final ground profile of approximately 290mOD on the eastern side of the quarry to approximately 250mOD on its western side; • construction of a dedicated waste inspection and quarantine shed and provision of in-site storage container and • associated ancillary infrastructure (to include list site offices and welfare facilities, weighbridge, car parking, fuel storage facilities, site drainage and on-site water management and treatment system(s). It is anticipated that the backfilling operations and restoration of Calary Quarry would take in the region of 10 to 12 years to complete. The site will operate from 06:00 to 18:00hrs Monday to Friday and 08:00 to 14:00 on Saturday. No operations will take place outside these times or bank holidays. The project is anticipated to generate an average daily total (AADT) of up to 12 heavy goods vehicle (HGV) movements per hour through the importation of inert soil waste materials. The main route to and from the facility will be along the R755 Regional Road to Junction 8 of the N11 National Primary Road at Kilmacanogue. The quarry void will be de-watered prior to receiving any imported waste materials. All water will be discharged via the existing discharge point to the Killough River, in compliance with emissions limits set by an existing discharge licence issued by Wicklow County Council (Ref. No. WPL87). Before the onset of any dewatering operations, new settlement ponds and a hydrocarbon interceptor will be installed will be installed at the application site to treat any run-off before its discharge off-site. Once operational, all incidental rainfall, surface water run-off and groundwater inflows will be allowed to naturally recharge into the ground or directed into sumps where it will be discharged from site in compliance with the terms of the existing discharge licence (though these would be superseded by any waste licence issued by the EPA).
Is the project or plan directly connected with or necessary to the management of the site?	No

Are there other projects or plans that together with the project or plan being assessed could affect the site?	No

The assessment of significance of effects

Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 sites	The development and operation of an inert soil recovery facility to facilitate restoration and backfilling of Calary Quarry will have no effects on the integrity of the Wicklow Mountain SPA, or on its qualifying bird species including: • merlin; and • peregrine. for which this site is of European importance and in light of the conservation objectives for the SPA or individual qualifying bird species, either as a stand-alone project or in-combination with other plans and projects.
Explain why the effects are not considered significant	The project will not result in any direct land take or reduction in habitat area of Wicklow Mountains SPA. The project will not result in the loss of any confirmed alternative nesting site for peregrine and/ or merlin within the mean core ranges of these species around the Wicklow Mountains SPA. The project will not result in any significant loss of potential foraging habitat for merlin or peregrine mean core ranges of these species around the Wicklow Mountains SPA which would impact on the local population status of these species. The operation of the inert sold recovery facility and backfilling of Calary Quarry is not predicted to increase overall ambient noise levels where there would be any effects on the territorial behaviour of peregrines and merlins that may include the quarry at Calary and wider surrounding areas including the Great Sugar Loaf Mountain.
List of agencies consulted: provide contact name and telephone or e-mail address	Mr Michael Murphy, Dept. Of Arts, Heritage & the Gaeltacht Tel: (053) 911 7516

Data collected to carry out the assessment

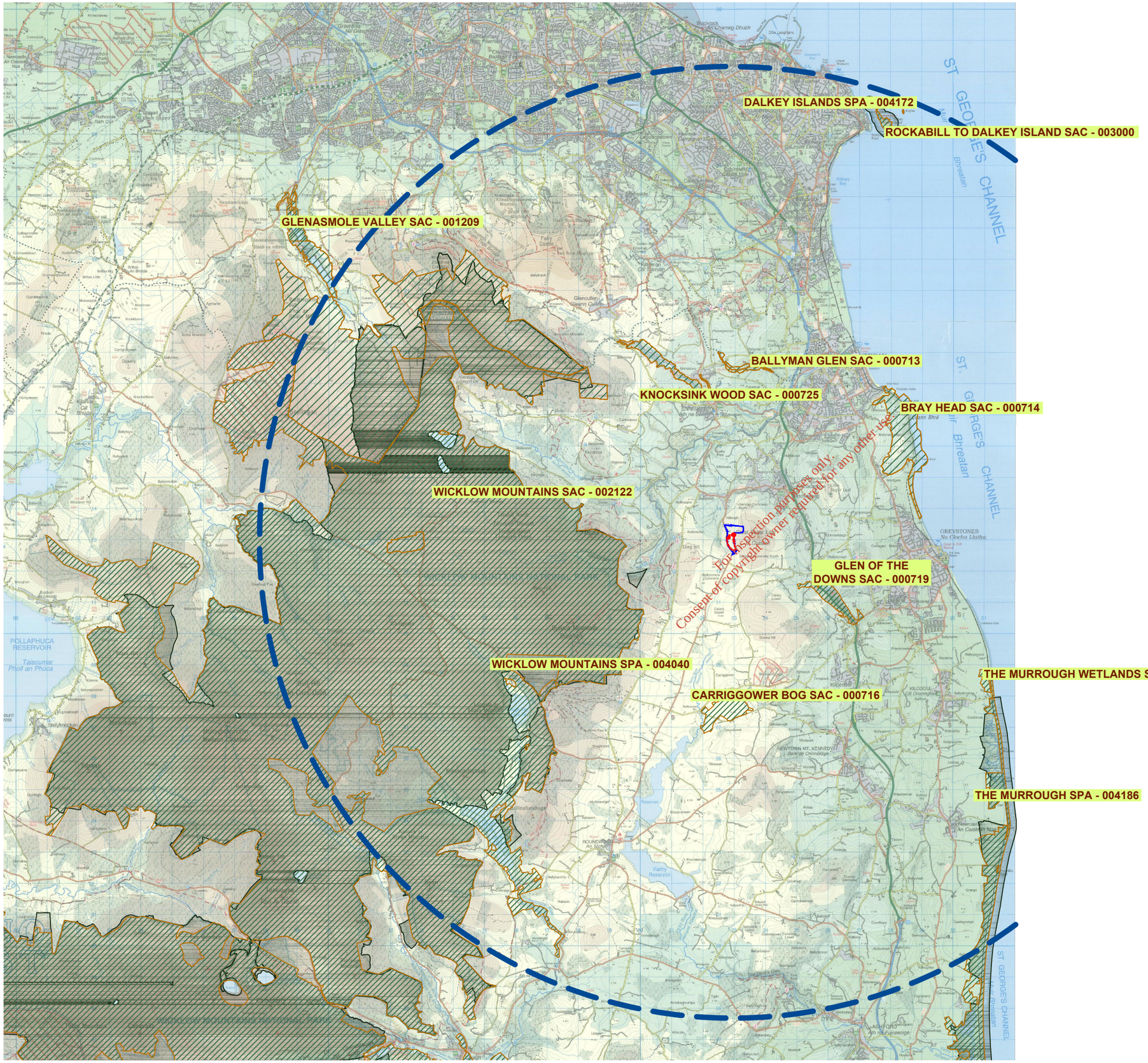
Who carried out the assessment	Sources of data	Level of assessment completed	Where can the full results of the assessment be accessed and viewed?
Steve Judge Senior Ecologist MCIEEM (SLR employee)	NPWS	Stage 1 – Screening Assessment Review of desk-top information relating to the Natura 2000 sites and qualifying features. The assessment is qualitative and is based on best practice and professional experience.	This document.

10.0 CLOSURE

This report has been prepared by SLR Consulting Ireland (SLR) with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Roadstone Limited; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.



NOTES

1. ORDNANCE SURVEY IRELAND LICENCE NO. SU 0000716 (C) ORDNANCE SURVEY IRELAND & GOVERNMENT OF IRELAND

2. MAPPING FROM ORDNANCE SURVEY DISCOVERY SERIES MAPPING - MAP NO'S 68, 69, 76 & 77

LEGEND

- ROADSTONE LIMITED LAND INTEREST (c.25.4 Hectares)
- PLANNING APPLICATION AREA (c.9.1 Hectares)
- 15KM RADIUS FROM PLANNING APPLICATION AREA
- NPWS - SPECIAL AREA OF CONSERVATION (SAC)
- NPWS - SPECIAL PROTECTION AREA (SPA)

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ROADSTONE LIMITED

APPROPRIATE ASSESSMENT

INERT SOIL WASTE RECOVERY FACILITY
CALARY QUARRY,
KILMACANOGE, CO. WICKLOW

LOCATION OF PROJECT AND NATURA 2000 SITES

FIGURE 1

Scale	Date
1:125,000 @ A3	MAY 2016

00180.00109.0.FIG_1_AA.Location of Project and Natura 2000 Sites.dwg

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