Attachment–1–2

Non-Technical Summary

Introduction

The following Non-Technical summary has been provided in accordance with the requirements of Article 12 (1) (u) of the Waste Management (Licensing) Regulations, S.I. 395 of 2004, as amended.

All figures and tables referred to within the Non-Technical Summary are included in the Waste Management Licence Application Document.

Roadstone Limited, Fortunestown, Dublin 24 intend to apply to the Environmental Protection Agency for a waste licence for the development and operation of a soil recovery facility on lands at Garryhesta Pit, Knockanemore, Ovens, Co. Cork (National Grid Reference 152439E 069787N).

The nature of the development is the restoration of part (c. 6.7 ha) of existing quarry (QR19 06/11798 & PL04.225332) by importation of up to 300,000 tonnes per annum of inert soil and stones and river dredging spoil (EWC 17-05-04 and 17-05-06). The proposed Soil Recovery Facility will utilise the permitted quarry infrastructure including internal roads, site office, welfare facilities and other ancillaries to complete the works. Access to the site will be from the permitted main entrance on the N22 National Primary Road. A wheel wash and weighbridge will be provided as part of the proposed development and the existing workshop will be utilised as a quarantine area. A hard-stand with drainage to oil interceptor will also be provided as a designated refueling area. The total application area including the site infrastructure covers 7.9 ha of lands. Cork County Council issued notification of decision to grant planning permission (P.Ref. No. 18/05155) for the above development on 22/11/2018.

A copy of the Environmental Impact Assessment Report (EIAR) will be submitted to the Agency with the Waste Licence Application (Refer to Attachment 6-3-9). Copies of relevant planning documents relating to the planning history of the site are also included (Refer to Attachment 6-1 Stakeholder Engagement). A planning history for the Site is included In EIAR Section 3.2.1.2.

The principal activity is Class R 5 of the Fourth Schedule of the Waste Management Act 1996, as amended (recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials). Other activities include Class R 13 of the Fourth Schedule (Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced)).

For consistency it is considered the hours of operation should be in accordance with Condition No. 31 under planning permission (QR19 06/11798 & PL04.225332) for the quarry i.e.,

> *Hours of operation shall be restricted to the following hours:*
> *07 .00 to 18.00hrs Monday to Friday and between 07.00 and 14.00 hrs Saturday.*
> *No operations shall take place on Sundays and Bank or Public holidays.*

Details on measures to ensure that waste production is avoided in accordance with the waste hierarchy in Council Directive 98/2008/EC on waste and section 21A of the Waste Management Act 1996, as amended; where waste is generated, it is prepared for re-use, recycled or recovered or, where that is technically and economically impossible, it is disposed of while avoiding or reducing any impact on the environment is provided in Attachments 8-2-1 and 4-3-2.

The inert soil and stone can be used for beneficial restoration purposes subject to basic characterisation, inspection and verification without the requirement for any secondary recovery operations. The proposed facility will involve the recovery/reuse of inert soil and stones and river dredging spoil, and as such the recovery operations are further up the waste hierarchy, insofar as the wastes are prepared for re-use. Clean, uncontaminated soils and dredged materials are suitable as intake in waste recovery facilities for quarry restoration projects. The facility will result in a reduction of quantities of such waste being sent to landfill sites in the region and will also enable the lands to be restored to agricultural use.

Standard Operating Procedures (SOP's) will be put in place to ensure that all inert waste imported to site for recovery will be subject to comprehensive waste acceptance, inspection and sampling procedures (Refer to EIAR Appendix 5.3 for typical examples of SOP's).

The recovery of waste is essential to divert reusable inert waste from disposal in landfill, as required under the Waste Framework Directive 2008 (2008/98/EC), and the European Communities (Waste Directive) Regulations, 2011 (S.I. 126 of 2011). Thus, the facility will result in a reduction of quantities of such waste being sent to landfill sites in the region. Furthermore, the recovery of waste also has the environmental benefit of enabling the lands to be reclaimed and improved for agricultural use in accordance with the restoration scheme proposed.

In Compliance with Article 12 (1) (u) of the Waste Management (Licensing) Regulations, S.I. 395 of 2004, as amended we have presented below a non-technical summary of the information provided in accordance with paragraphs (a) to (t) of sub-article 12(1) of the said regulations.

1.(a) give the name, address and, where applicable, any telephone number and telefax number of the applicant (and, if different, the operator of the facility concerned), the address to which correspondence relating to the application should be sent and, if the applicant or operator is a body corporate, the address of its registered office or principal office,

Applicant's Details

Name*:	ROADSTONE LIMITED
Address:	GARRYHESTA PIT
	KNOCKANEMORE
	OVENS
	CO. CORK
Tel:	021 4532128
Fax:	None
e-mail:	pgibney@roadstone.ie

Name and Address for Correspondence

Name:	J SHEILS PLANNING AND ENVIRONMENTAL LTD
Address:	31 ATHLUMNEY CASTLE
	NAVAN
	CO. MEATH
Tel:	087-2730087
Fax:	Not Applicable
e-mail:	johnsheils@jspe.ie

Address of registered or principal office of Body Corporate

Address:	ROADSTOWN LIMITED
	FORTUNESTOWN
	TALLAGHT
	DUBLIN 24
Tel:	01 4041200
Fax:	None
e-mail:	pgibney@roadstone.ie

1.(b) give the name of the planning authority in whose functional area the relevant activity is or will be carried on,

Name:	CORK COUNTY COUNCIL
Address:	PLANNING DEPARTMENT
	COUNTY HALL
	CARRIGROHANE ROAD
	CO. CORK
Tel:	021 427 6891
Fax:	021 427 6321
e-mail:	planninginfo@corkcoco.ie

1.(c) in the case of a discharge of any trade effluent or other matter (other than domestic sewage or storm water) to a sewer of a sanitary authority, give the name of the sanitary authority in which the sewer is vested or by which it is controlled,

Not Applicable (Surface water run-off only).

1.(d) give the location or postal address (including, where appropriate, the name of the townland or townlands) and the National Grid reference of the facility or premises to which the application relates,

Name:	ROADSTONE LIMITED
Address*:	GARRYHESTA PIT
	KNOCKANEMORE
	OVENS
	CO. CORK
Tel:	021 4532128
Fax:	None
e-mail:	pgibney@roadstone.ie

National Grid Reference	152439E 069787N

1.(e) describe the nature of the facility or premises concerned, including the proposed capacity of the facility or premises and, in the case of an application in respect of the landfill of waste, the requirements specified in Annex 1 of the Landfill Directive,

The nature of the development is the restoration of part (c. 6.7 ha) of existing quarry (QR19 06/11798 & PL04.225332) by importation of up to 300,000 tonnes per annum of inert soil and stones and river dredging spoil (EWC 17-05-04 and 17-05-06). The proposed Soil Recovery Facility will utilise the permitted quarry infrastructure including internal roads, site office, welfare facilities and other ancillaries to complete the works. Access to the site will be from the permitted main entrance on the N22 National Primary Road. A wheel wash and weighbridge will be provided as part of the proposed development and the existing workshop will be utilised as a quarantine area. A hard-stand with drainage to oil interceptor will also be provided as a designated refueling area. The total application area including the site infrastructure covers 7.9 ha of lands.

The phased restoration scheme of the area is shown by Drawings D02 – D05 (Refer to Attachment-3-2-1 Site Plans).

Table 1 Volume of Material to be Imported for Restoration Works at Garryhesta Pit

Phase		Figures	Depth of Fill		Void Space	
			Average	Maximum		
			m	m	m^3	[1]tonnes
1	*Infill to 40m AOD*	*3.1*	*11.9*	*17.2*	*507,493*	*913,487*
2	*Infill to 48mAOD*	*3.2*	*7.2*	*8*	*376,915*	*678,447*
3	*Final Profile*	*3.3*	*6.3*	*10*	*391,635*	*704,943*
Totals	*1 to 3*		*20.6*	*30*	*1,276,043*	*2,296,877*

Note: *[1]Assumes conversion factor of 1.8 tonnes/m^3 for inert soils and stones (allowing for compaction and settlement). This is based on JSPE Ltd.'s experience and other operators in the sector.*

1.(f) specify the class or classes of activity concerned, in accordance with the Third and Fourth Schedules of the Act and, in the case of an application in respect of the landfill of waste, specify the class of landfill in accordance with Article 4 of the Landfill Directive,

The principal activity is Class R 5 of the Fourth Schedule of the Waste Management Act 1996, as amended (recycling/reclamation of other inorganic materials, which includes soil cleaning resulting in recovery of the soil and recycling of inorganic construction materials). Other activities include Class R 13 of the Fourth Schedule (Storage of waste pending any of the operations numbered R 1 to R 12 (excluding temporary storage (being preliminary storage according to the definition of 'collection' in section 5(1)), pending collection, on the site where the waste is produced)).

1.(g) specify, by reference to the relevant European Waste Catalogue codes as presented by Commission Decision 2000/532/EC of 3 May 2000 11, the quantity and nature of the waste or wastes which will be treated, recovered or disposed of,

Table 2 Waste material including EWC code, proposed quantity and use.

Waste material	EWC Code	Quantity Tonnes / annum	On-site recovery/disposal (Method & Location)
Soil and stones other than those mentioned in 17 05 03	17 05 04	300,000	Used as backfill to restore sand & gravel pit workings
Dredging spoil other than those mentioned in17 05 05	17 05 06		Used as backfill to restore sand & gravel pit workings

1.(h) specify the raw and ancillary materials, substances, preparations, fuels and energy which will be utilised in or produced by the activity,

The only waste to be accepted at the facility for recovery comprises inert soil and stone, and river dredged spoil. As such the materials will not undergo any form of processing involving the use of chemicals or additives.

The potable water supply for the site office is from the local mains, while the wheel wash will be supplied by surface water from the quarry lagoon system. Water used for dust

suppression is also sourced from the quarry lagoon. It should be noted that in Ireland rainfall occurs daily about 50% of the year. On days requiring dust suppression water usage would amount to 5 to 10m^3 per day.

The only raw materials used on site are diesel, hydraulic oil and engine oil which will be used to operate diesel powered plant on site. As only an excavator/bulldozer will be used in the proposed SRF, the quantities of fuel oil used on site will be relatively small.

It has been assessed that 30,000 litres per year will be required to service the plant and machinery used on site and electricity usage including lighting, office heating and operation of the weighbridge will amount to 20 MWH per annum.

1.(i) describe the plant, methods, processes, ancillary processes, abatement, recovery and treatment systems and operating procedures for the activity,

The attached Site Layout Plans (Refer to (WLA Attachment-3-2-1 Parts 1 & 2 – Drawings 02 – 04) indicate the location of all activities and identifies all buildings and facilities at the proposed Soil Recovery Facility.

Standard Operating Procedures (SOP's) will be put in place to ensure that all inert waste imported to site for recovery will be subject to comprehensive waste acceptance, inspection and sampling procedures (Refer to EIAR Appendix 5.3 for typical examples of SOP's).

All waste accepted for recovery will undergo a site pre-approval procedure (Refer to EIAR Appendix 5.3.4).

Each consignment of material arriving at the facility will be inspected at the point of entry by trained personnel to ensure it complies with what was agreed in the pre-approval stage. Basic characterisation of the material will be carried out in accordance with the Waste Inspection Procedure (Refer to EIAR Appendix 5.3.2).

Only suitable material will be permitted to be accepted in the facility (i.e. inert soil and stones and river dredging spoil (EWC 17-05-04 and 17-05-06)).

Material not suitable for recovery at the facility will be rejected either at the pre-approval stage, the onsite verification stage, or before recovery stage at the customers expense. If reloading cannot occur immediately, it will be separated and moved to the quarantine area. The recycling manger will be informed immediately. A waste acceptance/rejection procedure will be put in place (Refer to EIAR Appendix 5.3.3).

Any non-natural materials in the consignment will be manually removed where possible and transferred to the appropriate waste skip for disposal at an appropriate facility.

Material accepted at the facility will undergo routine testing as detailed in the Roadstone Waste Intake Sampling Procedure (Refer to EIAR Appendix 5.3.1).

Basic characterisation will be undertaken a second time, upon tipping. Only after this second inspection will the waste be accepted. Following the second inspection the material will be accepted and placed within the infill area (placement by bulldozer/excavator).

Progressive restoration involving grass seeding of restored areas shall be carried out on a staged basis to reduce the effects of soil erosion, windblown dust, to aid ground stabilisation and as an effective means of weed control.

Once the quarry is re-instated it will be seeded with a suitable mix of grasses suitable for pasture in order to quickly stabilise the topsoil. Once the grass sward has become established the restored farmland can be kept either as pasture or hay meadow.

The recovery operations will be sited within the quarry area, being removed from residential property and screened from outside views by the existing perimeter screening berms.

The SRF will require one person to operate a bulldozer/excavator and one general foreman to monitor and inspect the quality and suitability of imported materials being brought to the site for recovery and two other general site operatives. It is expected that the existing staff will take on these roles.

Plant on site will consist of a bulldozer/excavator, tractor and bowser, with respect to the backfilling of the quarry workings using inert soils and stones and dredging spoil. All this plant is currently in use on site as part of the quarry operations. A road sweeper is also available for use on site and adjacent sections of the N22 at least on a weekly basis and/or if a spillage occurs.

Mitigation measures to alleviate any adverse impacts from the development on the environment have been incorporated into the design (Refer to EIAR Section 3 and Section 4) to ensure that the development can be operated within accepted standards for this type of development.

Dust Abatement

The principal measures employed to control fugitive (ground) dust emissions from general site activity, internal haulage and land reclamation operations as follows:

- In accordance with condition No. 14 of Planning Permission (QR19 06/11798 & PL04.225332) a fixed water spray system has been installed to include the access road and internal roads,

- During dry weather the haul roads and tipping area will be sprayed with water to dampen any likely dust blows.
- A mobile water browser is provided in periods of dry or windy weather to cover locations where it is impractical or inappropriate to use a fixed water spray system.
- Consideration will be given to location of mobile plant to ensure that any principle dust sources cannot adversely affect sensitive off-site locations.
- A wheel wash facility will be installed on site and all vehicles required to pass through the wheel wash on exiting the site.
- Main site haulage routes within the site shall be maintained with a good temporary surface, as is the case at present.
- All internal roadways will be adequately drained, to prevent ponding.
- A road sweeper is available for use on site and adjacent sections of the N22 at least on a weekly basis and/or if a spillage occurs onto the public roadway.
- Reclaimed areas will be seeded at the earliest appropriate time.

Dust emissions from the facility will be controlled and monitored. Dust emissions and their management will be addressed in a revamped 'Environmental Management System' (EMS) for the entire Garryhesta site.

Regular servicing of facility plant & machinery will ensure that exhaust emissions are kept to a minimum.

Surface Water Abatement

There are no surface water flow paths from the proposed development site to either the River Bride or the River Lee and therefore no direct impacts on either of these surface water bodies is possible from any runoff generated on-site.

During infilling there will be no pathway for surface water to leave the site other than by recharging into groundwater. The infilling works will require significant ground works and site levelling, and despite the lack of pathway certain measures can be implemented to ensure no indirect issue with groundwater quality.

Management of surface water runoff and mitigation of surface water runoff impacts will be undertaken as follows:

- Infilling will only be undertaken when the groundwater level is at or below the base of the pit (i.e. infilling will not be completed during very wet periods over winter when the pit floor can become submerged with groundwater);

- Prior to pit floor backfilling the existing residual sand and gravel in the floor of the pit will be levelled to ensure there is no potential for ponding or exposed groundwater during the backfilling operations;
- Runoff collected within the pit will be routed in a temporary sump and allowed to recharge into the ground via a percolation area; and,
- The infilled area will be seeded for establishment of grassland at the soonest opportunity to avoid erosion.

An emergency response procedure for hydrocarbon spills and appropriate training of site staff in its implementation, are in place. Surface water emissions from the facility and their management will be addressed in a revamped 'Environmental Management System' (EMS) for the Garryhesta site.

Groundwater Abatement

The proposed infill material is inert soil and stone (EWC 17 05 04) and river dredging spoil (EWC 17 05 06). Infilling of the site with inert soil and dredging spoil should pose a low risk to groundwater quality regardless of the vulnerability rating as no harmful contaminants will be present. In addition, inert soil and stone and river dredging spoil will not contain either organic matter or liquids that will form a source of organic contaminants of microbial pathogens, nor provide a substrate to feed microbial pathogens.

In terms of impacting on the groundwater vulnerability of the site, the importing of the inert fill will have a positive effect on the site in that the groundwater vulnerability rating will be lowered.

In terms of mitigation for groundwater quality protection it is proposed that infilling will only be undertaken when the groundwater level is at or below the base of the pit (i.e. infilling will not be completed during very wet periods over winter when the pit floor becomes submerged in groundwater).

Risks to groundwater on site relate primarily to the use and storage of hydrocarbon liquids.

Proposed mitigation measures are outlined as follows:

- A hard-stand with drainage to oil interceptor will be provided as a designated refueling area.
- All plant and machinery will be serviced before being mobilised to site, and regular leak inspections will be completed during the backfilling works; No plant maintenance will be completed on site, any broken-down plant will be
- removed from site to be fixed; and,

- An emergency spill kit with oil boom, absorbers etc. will be kept on site for use in the event of an accidental spill.
- All waste oils will be removed from the site for authorised disposal by licenced waste contractors. A record of all waste removal will be kept in the site office.
- The operator has put in place an emergency response procedure for hydrocarbon spills and appropriate training of site staff in its implementation.
- A groundwater monitoring programme has been put in place to ensure that there is no impact on water quality because of the recovery operations. 4 no. monitoring wells were installed in the area of the proposed infill site (MW1 – MW4) in October 2017.

Noise Abatement

The main source of noise and vibration will be from the movement of trucks on internal haul roads, the tipping of material, placing and grading of material. The type of mitigation techniques implemented to reduce noise are detailed below:

- The site benefits from an established mature planted screening berm along the site boundary with the N22 Primary Route.
- The provision of temporary screen banks to screen site activities from outside views as necessary.
- The existing designated internal haul roads will be utilised to manage traffic entering and leaving the site to ensure that site traffic is removed from nearest noise sensitive receptors.
- Internal haul road gradients will be kept as low as possible to reduce engine / brake noise from heavy vehicles.
- All machinery used will be CE certified for compliance with EU noise control limits.
- Regular maintenance of all plant and machinery is an integral part of site management and is important in helping to minimise noise impact.
- All plant and machinery are switched off when not in use.
- A noise management programme will be defined as part of the EMS.

Noise monitoring will be carried out at 6 No. noise monitoring stations (N1-N6) in the vicinity of the nearest noise sensitive properties (Refer to Attachment-3-2-1 Part 2 – Drawing 06) and in accordance with any monitoring programme agreed with the EPA.

Noise emissions from the facility and their management will be addressed in the revamped 'Environmental Management System' (EMS) for the Garryhesta site. The issue of noise and the mitigation measures available to reduce noise to acceptable levels is dealt with in detail in EIAR Section 4.7 - Noise.

1.(j) provide information for the purpose of enabling the Agency to make a determination in relation to the matters specified in paragraphs (a) to (g) of section 40(4) of the Act,

Due consideration has been given to the requirements of Section 40(4)[(a) to (g)] of the Waste Management Act 1996, as amended through preparation of the Waste Management Licence Application as follows.

The quarry has in place an accredited (I.S. EN ISO 14001:2015) Environmental Management System (EMS). The existing EMS was established in compliance with Planning Permission Condition no. 39 of Planning Permission QR19 06/11798 & PL04.225332 for the quarry. Roadstone also have in place an accredited (I.S. EN ISO 50001:2011) Energy Management System for the quarry at Garryhesta. An Environmental Monitoring Programme of water, dust and noise is in place. The Environmental Monitoring locations (Water, Dust and Noise) are shown on Drawing 06 (Refer to Attachment-3-2-1 Part 2).

Details with respect to control and abatement, accepted emission limit values and monitoring requirements are provided in the Waste Management Application (in particular refer to Attachment 4-7 BAT Assessment). The measures proposed will ensure that emissions from the recovery activities will not result in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value.

Details with respect to the nature, scale, operation, impact, control and abatement, monitoring, closure and aftercare have been provided through preparation of the Waste Management Licence application. The measures proposed are considered adequate to ensure that the facility will be operated in accordance with any conditions attached to the licence and the landfill directive so as not to cause environmental pollution.

A site specific BAT Assessment has been prepared with respect to Recovery of Inert Soils and stone at Garryhesta Pit (Refer to Attachment 4-7). The only waste to be accepted at the facility for restoration of the lands will comprise inert soils and stone, and river dredge spoil material. The material does not undergo any complicated process other than inspection prior to recovery and placement. As such there is little or no requirement to apply

Best Available Technology (BAT) with respect to the recovery operations. However, consideration has been given through preparation of this application with respect to control and abatement measures to ensure the facility will operate within accepted emission limit values for this type of operation.

The operation of an inert waste recovery operation will significantly reduce the quantities of such waste currently being sent to landfill sites in the Region. As such, the proposed development is entirely consistent with the aims and objectives of both National Regional and Local Government Policy.

The applicant (Roadstone Limited) or other relevant person have not been convicted under the Waste Management Act 1996, as amended, the EPA Act 1992, as amended, the Local Government (Water Pollution) Acts 1977 and 1990 or the Air Pollution Act 1987. The applicant is a fit and proper person.

Clean closure is envisaged such that all plant is safely removed for reuse or recycling and all wastes are removed off site at the time of closure for appropriate recovery or disposal.

A Closure Plan & Environmental Liability Risk Assessment has been prepared for the proposed Inert Waste Recovery Facility at Garryhesta Pit (Refer to Attachment-9-2-1-CRAMP). Details with respect to Financial Provisions are addressed through this submission.

The applicant (Roadstone Ltd) has confirmed that they will be in a position to meet any financial commitments or liabilities that may have been or will be entered into or incurred in carrying on the activity to which the application relates or in consequence of ceasing to carry out that activity.

It is acknowledged that as a typical condition of any waste licence that the Agency may amend the licence at any time in certain circumstances in accordance with section 42B of the Waste Management Act 1996 as amended, to require, or not require as the case may be, the putting in place of a financial provision to incorporate costings for CRAMP and/or Environmental Liabilities Risk Assessment. This amendment may be implemented by the Agency in the event of an incident that creates a significant residual environmental liability or where the environmental risk profile changes on site.

Roadstone Limited has estimated the closure and restoration/ aftercare requirements (€155,628). Roadstone Limited, if deemed necessary will put in place a secure fund, and/or on demand performance bond. The form and value of the financial provision being subject to agreement with the EPA.

Details with respect to energy usage (i.e. electricity & fuel) are provided in Attachment 4.6.1-Water and Energy Use. It has been assessed that 30,000 litres per year will be required to service the plant and machinery used on site and electricity usage including lighting, office heating and operation of the weighbridge will amount to 20 MWH per annum.

An existing single-phase overhead electricity supply provides for lighting and heating of the office. Energy awareness notices will be posted around the site to ensure employees are aware of the need to conserve energy. Energy efficiencies will be achieved by using modern plant and equipment and servicing that equipment on a scheduled basis. Plant and equipment not in use will be shut off.

The quarry has in place an accredited (I.S. EN ISO 14001:2015) Environmental Management System (EMS). Roadstone also have in place an accredited (I.S. EN ISO 50001:2011) Energy Management System for the quarry at Garryhesta.

From Roadstone's perspective 'IS 50001' offered a systematic approach for the development and implementation of energy management. In developing the programme, their focus has been to evolve the energy management system so that continuous improvement is at the core of the system, and furthermore, it can be demonstrated. They have invested resources in implementing energy monitoring systems nationwide to establish where energy is used, set baselines, evaluate and implement savings measures and demonstrate savings.

Noise emissions generated from the site activity will continue to be monitored and controlled to an acceptable standard as conditioned under the existing planning permissions and any further conditions under an EPA waste licence for the proposed restoration of the site.

1.(k) give particulars of the source, location, nature, composition, quantity, level and rate of emissions arising from the activity and, where relevant, the period or periods during which such emissions are made or are to be made,

Air

The materials to be recovered are principally "soils and stone" and "river dredge spoil". Any dust generated by the operation will comprise inert particulate matter. Dust emanates from the placement of materials, the movement of vehicles on internal roads and unloading of vehicles. However, the effect of wind and high ambient temperatures are also important factors in dust generation and migration. Problems may arise at sites when all these factors arise simultaneously. The impacts of any dust deposition from the operations will be direct, of short duration, temporary and largely confined to the site area.

Surface Water

There are no surface water flowpaths from the proposed development site to either the River Bride or the River Lee and therefore no direct impacts on either of these surface water bodies is possible from any runoff generated on-site. During infilling there will be no pathway for surface water to leave the site other than by recharging into groundwater.

Groundwater

The primary sources of impact is the infilling of the void with inert soil and stone and river dredging spoil whereby the primary potential hazards are suspended solids, leaching and spillages, and accidental discharges of potential pollutants to the local groundwater causing a deterioration in water quality. It should be noted that the proposed infill material is to be inert soil and stone and therefore no harmful/toxic contaminants are expected to be present.

During infilling there will no pathway for surface water to leave the site other than by recharging into groundwater.

Infilling of the site with inert soil and river dredging spoil should pose a low risk to groundwater quality regardless of the vulnerability rating as no harmful contaminants will be present.

Worst case impacts are only likely to be a slightly alteration of the groundwater quality locally. These minor local effects are not expected to compromise groundwater quality with respect to groundwater or drinking water regulations.

Sewer

The existing welfare facilities including toilets provided in the quarry will be utilised by the proposed development. A holding tank is provided which is emptied on a routine basis by a certified waste collection contractor to an approved waste facility.

Noise

The principal noise sources at the application site will be intermittent noise generated by movement of a bulldozer and trucks on and off site. The noise environment in the immediate vicinity of the existing quarry site is determined primarily by noise from the National Primary road (N22), and low-level noise emissions from the vehicles and plant within the quarry. When this is taken into account along with the results of the noise prediction analysis, it is considered that the applicant will be able to ensure that the noise levels due to the SRF facility are within the accepted thresholds for this type of development.

1.(l) give details, and an assessment of the effects, of any existing or proposed emissions on the environment, including any environmental medium other than that into which the emissions are, or are to be, made, and of proposed measures to prevent or eliminate or, where that is not practicable, to limit or abate such emissions,

Air

Fugitive dust emissions are generated wherever there is movement of dust relative to the air. The emission of fugitive dust from inert SRF activities generally arise from loading and unloading of vehicles and Internal movement of vehicles. The impacts of any dust deposition from the operations will be direct, of short duration, temporary and largely confined to the site area.

The operator has put in place a dust monitoring programme for the overall Garryhesta site (Refer to Drawing D06). This allows on-going monitoring of fugitive dust emissions from the site, and ensures that dust threshold limits are not exceeded, and that dust emissions are compliant with any future requirements or regulations.

Progressive restoration of the quarry over time will also reduce the area of exposed ground within the existing quarry.

Mitigation measures are already in place with respect to the quarry to reduce dust emissions, to aid fugitive dust reduction, and to ensure that the operations remain within the stated thresholds. The company has in place an Environmental Management System (EMS) covering the entire quarry that sets out procedures to follow to ensure emissions are kept to a minimum.

A number of measures have/will be adopted to minimise dust emissions to the atmosphere from general site activity, internal haulage and land reclamation operations as follows:

- In accordance with condition No. 14 of Planning Permission (QR19 06/11798 & PL04.225332) a fixed water spray system has been installed to include the access road and internal roads,
- During dry weather the haul roads and tipping area will be sprayed with water to dampen any likely dust blows.
- A mobile water browser is provided in periods of dry or windy weather to cover locations where it is impractical or inappropriate to use a fixed water spray system.
- Consideration will be given to location of mobile plant so as to ensure that any principle dust sources cannot adversely affect sensitive off-site locations.

- A wheel wash facility will be installed on site and all vehicles required to pass through the wheel wash on exiting the site.
- Main site haulage routes within the site shall be maintained with a good temporary surface, as is the case at present.
- All internal roadways will be adequately drained, to prevent ponding.
- A road sweeper is available for use on site and adjacent sections of the N22 at least on a weekly basis and/or if a spillage occurs onto the public roadway.
- Reclaimed areas will be seeded at the earliest appropriate time.
- Regular servicing of facility plant & machinery will ensure that exhaust emissions are kept to a minimum.

The existing dust monitoring programme will be maintained.

In the long term the development will result in reduced potential for emissions of dust because the site will be restored and revegetated.

It is considered given the nature of the activity, control and abatement measures and management of the existing recovery facility that emissions of pollutants (as defined in Waste Management Act 1996, as amended and Air Pollution Acts 1992 and 1987 respectively) to the atmosphere are not likely to impair the environment (i.e. be injurious to public health or have a deleterious effect on flora or fauna or damage property or impair or interfere with amenities or with the environment).

Surface Water

There are no surface water flowpaths from the proposed development site to either the River Bride or the River Lee and therefore no direct impacts on either of these surface water bodies is possible from any runoff generated on-site. During infilling there will be no pathway for surface water to leave the site other than by recharging into groundwater.

Surface water monitoring is carried out at locations SW1 and SW2 which are upstream and downstream of the site respectively (Refer to Environmental Monitoring Plan Drawing D06 for locations). It is proposed that surface water monitoring will continue to be carried out Biannually for a number of physical and chemical parameters in order to assess water quality relative to European Communities Environmental objectives (Surface Waters) Regulations 2009 (S.I. No. 272 of 2009). Refer to EIAR Table 4.4.4 for details of relevant parameters to be monitored.

Management of surface water runoff and mitigation of surface water runoff impacts will be undertaken as follows:

- Infilling will only be undertaken when the groundwater level is at or below the base of the pit (i.e. infilling will not be completed during very wet periods over winter when the pit floor can become submerged with groundwater);
- Prior to pit floor backfilling the existing residual sand and gravel in the floor of the pit will be levelled to ensure there is no potential for ponding or exposed groundwater during the backfilling operations;
- Runoff collected within the pit will be routed in a temporary sump and allowed to recharge into the ground via a percolation area; and,
- The infilled area will be seeded for establishment of grassland at the soonest opportunity to avoid erosion.

These mitigation measures will ensure no significant impacts on local surface waters will occur.

An emergency response procedure for hydrocarbon spills and appropriate training of site staff in its implementation, are in place. Surface water emissions from the facility and their management will be addressed in a revamped 'Environmental Management System' (EMS) for the Garryhesta site.

Groundwater

The proposed infill material is inert soil and stone (EWC 17 05 04) and river dredging spoil (EWC 17 05 06). Infilling of the site with inert soil and dredging spoil should pose a low risk to groundwater quality regardless of the vulnerability rating as no harmful contaminants will be present. In addition, inert soil and stone and river dredging spoil will not contain either organic matter or liquids that will form a source of organic contaminants of microbial pathogens, nor provide a substrate to feed microbial pathogens.

In terms of impacting on the groundwater vulnerability of the site, the importing of the inert fill will have a positive effect on the site in that the groundwater vulnerability rating will be lower.

4 no. monitoring wells both up-gradient and down-gradient were installed in the area of the proposed infill site (MW1 – MW4) and an adjoining farm well is also monitored. The locations of the monitoring wells are shown on Environmental Monitoring Plan Drawing D06.

Groundwater samples are tested for a number of physical and chemical parameters in order to assess water quality and detect possible contamination relative to European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. No. 9 of

2010) and European Union (Drinking Water) Regulations 2014 (SI 122 of 2014). Summary details of the groundwater parameters and trigger levels monitored in accordance with the above regulations are detailed in Attachment 9.1 - Environmental Management Techniques. It is proposed that groundwater monitoring will be carried out on a quarterly basis.

In terms of mitigation for groundwater quality protection it is proposed that infilling will only be undertaken when the groundwater level is at or below the base of the pit (i.e. infilling will not be completed during very wet periods over winter when the pit floor becomes submerged in groundwater).

Risks to groundwater on site relate primarily to the use and storage of hydrocarbon liquids.

Proposed mitigation measures are outlined as follows:

- A hard-stand with drainage to oil interceptor will be provided as a designated refuelling area.
- All plant and machinery will be serviced before being mobilised to site, and regular leak inspections will be completed during the backfilling works;
- No plant maintenance will be completed on site, any broken-down plant will be removed from site to be fixed; and,
- An emergency spill kit with oil boom, absorbers etc. will be kept on site for use in the event of an accidental spill;
- All waste oils will be removed from the site for authorised disposal by licenced waste contractors. A record of all waste removal will be kept in the site office.
- The operator has put in place an emergency response procedure for hydrocarbon spills and appropriate training of site staff in its implementation.

Noise

The main source of noise and vibration will be from the movement of trucks on internal haul roads, the tipping of material, placing and grading of material.

Noise prediction modelling (Refer to EIAR Section 4.7.4.2) indicate that the combined noise levels at the nearest susceptible residences for a “worst case” scenario is 53dBL_{Aeq} which is within the accepted thresholds for this type of development. It should also be noted that this area of the pit is effectively worked out and as such the only activity taking place in this section of the pit will be the restoration of the site by backfilling.

Residences in the area are typically experiencing noise levels of 80 dBL_{Aeq} during daytime hours due to passing traffic on the N22 Primary Route.

As such the noise environment in the immediate vicinity of the existing quarry site is determined primarily by noise from the National Primary road (N22), and low-level noise emissions from the vehicles and plant within the quarry. When this is taken into account along with the results of the noise prediction analysis, it is considered that the applicant will be able to ensure that the noise levels due to the SRF facility are within the accepted thresholds for this type of development.

Noise resulting from the operations can be kept to acceptable levels by the implementation of good design, effective operation and management and by the adoption of 'best practices'. Reducing noise at source wherever possible is the most effective way of minimising the impact but barriers and screens between noise source and receptor can also be used to very good effect. In compliance with the current planning permission for the quarry development and environmental due diligence, the applicant has put in place a number of mitigation measures that will benefit the proposed development of the SRF.

The type of mitigation techniques implemented to reduce noise are detailed below:

- The site benefits from an established mature planted screening berm along the site boundary with the N22 Primary Route.
- The provision of temporary screen banks to screen site activities from outside views as necessary.
- The existing designated internal haul roads will be utilised to manage traffic entering and leaving the site to ensure that site traffic is removed from nearest noise sensitive receptors.
- Internal haul road gradients will be kept as low as possible to reduce engine / brake noise from heavy vehicles.
- All machinery used will be CE certified for compliance with EU noise control limits.
- Regular maintenance of all plant and machinery is an integral part of site management and is important in helping to minimise noise impact.
- All plant and machinery are switched off when not in use.
- A noise management programme will be defined as part of the EMS.

Noise emissions from the facility will be controlled and monitored. Noise emissions from the facility and their management will be addressed in the revamped 'Environmental Management System' (EMS) for the Garryhesta site. The issue of noise and the mitigation measures available to reduce noise to acceptable levels is dealt with in detail in EIAR Section 4.7 - Noise.

1.(m) identify monitoring and sampling points and indicate proposed arrangements for the monitoring of emissions and the environmental consequences of any such emissions,

An environmental monitoring programme is already in place at the quarry for the monitoring of water, dust and noise in compliance with planning permission (QR19 06/11798 & PL04.225332). The Environmental Monitoring locations (Water, Dust and Noise) are shown on Environmental Monitoring Plan Drawing D06.

In preparation of this application consideration has been given to updating the environmental monitoring programme including provision of four ground water monitoring wells (MW1 to MW4), and also groundwater quality testing at the farm well to the west of the site. A number of the monitoring locations have been relocated due to difficulties with access and vegetation growth (i.e. Dust Locations D1 to D3 and noise monitoring location N5).

The future monitoring programme will be revised accordingly, subject to compliance with any conditions attached to any decision to grant planning permission and subsequent Waste Management Licence.

Air

Dust deposition monitoring has been carried out at the site in compliance with condition No. 13 of existing planning permission (QR19 06/11798 & PL04.225332) for the quarry development. Dust monitoring is carried out at three monitoring locations (D1, D2, D3) (Refer to Environmental Monitoring Plan (EMP) Drawing D06 for locations). It is also proposed to establish an additional dust monitoring station (D4) on the southern boundary of the landholding. Dust monitoring will continue to be carried out on a monthly basis.

Dust fall is measured using the Bergerhoff method as set out in German Standard VDI 2119. The normal recommended standard for dust emissions for this type of development is that "dust deposition shall not exceed 350 mg/m^2/day measured at the site boundaries and averaged over 30 days". This limit refers to total dust (using DIN method).

Cork County Council have recently issued notification of decision to grant planning permission for the soil recovery facility at Garryhesta (P.A. Ref. 18/05155). Condition No. 19 of this permission is consistent with the above Emission Limit Values. i.e. *"the operator of the site shall ensure that dust deposition arising out of the demolition and construction activities on site shall not exceed 350 mg/m^2/day at the site boundary averaged over 30 days*".

The above standard is also in accordance with guidance issued by both the Department of the Environment and the EPA in relation to dust deposition monitoring for these types of developments and will continue to be applied.

The applicant proposes to develop an Environmental Management System (EMS). The EMS will include a dust monitoring programme. This programme will allow on-going monitoring of fugitive dust emissions from the site, thereby assisting in ensuring compliance with any future requirements or regulations.

Surface Water

Surface water features in the vicinity of the site include a stream and small man-made pond. There are no surface water flow paths from the proposed development site to either the River Bride or the River Lee and therefore no direct impacts on either of these surface water bodies is possible from any runoff generated on-site.

2 No. surface water monitoring locations were established at the site. A local stream (SW1) is located on the western perimeter and upstream of the proposed site and the pond (SW2) is located directly south of the application area and downstream of the site. Monitoring locations are shown on EMP Drawing D06 .

It is proposed that surface water monitoring will be carried out Biannually for a number of physical and chemical parameters in order to assess water quality and detect possible contamination relative to European Communities Environmental objectives (Surface Waters) Regulations 2009 (S.I. No. 272 of 2009). Refer to EIAR Table 4.4.4 for details of relevant parameters to be monitored.

The surface water monitoring programme will be revised accordingly, subject to compliance with any conditions attached to any decision to grant a Waste Management Licence.

It is not considered that the surface run-off from the site will result in any significant effect on the quality of surface waters.

Groundwater

4 no. monitoring wells both up-gradient and down-gradient were installed in the area of the proposed infill site (MW1 – MW4) and an adjoining farm well is also monitored. The locations of the monitoring wells are shown on Environmental Monitoring Plan Drawing D06.

Summary details of the groundwater parameters and trigger levels to be monitored in accordance with the above regulations are detailed in Attachment 9.1 - Environmental

Management Techniques. It is proposed that groundwater monitoring will be carried out on a quarterly basis. This is recommended to ensure that the restoration of the site is not impacting on the groundwater beneath the site and to establish on-going trends in the groundwater monitoring boreholes.

Monitoring will be carried out in accordance with any conditions attached to a waste licence for the facility. It is not considered that any discharge of surface water run-off to ground will result in any significant effect on the quality of the groundwater.

Noise

Roadstone currently carryout out noise monitoring on a quarterly basis in accordance with the EMS for the quarry. Noise monitoring is carried out at 5 monitoring locations at the quarry (N1-N5). An additional noise monitoring station (N6) is to be established on the southern boundary of the landholding for future reference. Noise monitoring location N5 is also to be slightly relocated to the north western boundary due to difficulties with access and vegetation growth. The Environmental Monitoring locations are shown on EMP Drawing D06.

The Garryhesta Facility is regulated by Cork County Council and in compliance with Condition No.32 of Planning Permission (QR19.06/11798 & PL04.225332).

Cork County Council have recently issued notification of decision to grant planning permission for the soil recovery facility at Garryhesta (P.A. Ref. 18/05155).

"Noise levels emanating from the proposed development when measured at the boundary of the nearest noise sensitive locations which require protection from disturbance, shall not exceed 55 dBA (30-minute Leq) between 08.00 hours and 20.00 hours Mondays to Saturdays inclusive and shall not exceed 45 dBA (15-minute Leq) at any other time. Measurements shall be made in accordance with I.S.O. Recommendations R.1996/1 "Acoustics Description and Measurement of Environmental Noise, Part 1: Basic Quantities and Procedures. "If the noise contains a discrete, continuous note (whine, hiss, screech, hum, etc.), or if there are distinct impulses in the noise (bangs, clicks, clatters, or thumps), or if the noise is irregular enough in character to attract attention, a penalty of +5 dBA should be applied to the measured noise level and this increased level shall be used in assessing compliance with the specified levels. (Ref. BS 4142 Section 7.2)".

These levels are consistent with guidance issued by the Department of the Environment: "Quarries and Ancillary Activities – Guidelines for Planning Authorities (2004) DOEHLG".

It is proposed that the applicant shall carry out a noise survey of the site operations on a quarterly basis and/or in accordance with any conditions attached to a waste licence for the facility.

The results of monitoring to date shows that the development can comply with the noise level thresholds as specified and as a consequence the development will have no significant effects regards noise levels in the area.

This programme will allow on-going monitoring of noise emissions from the site, thereby assisting in ensuring compliance with any future requirements or regulations. A noise management programme will be defined as part of the EMS.

Through implementation of the proposed mitigation measures it is considered the development will continue to have no significant effects with regard to noise levels on the local residences, their property, livestock and amenity.

1. (n) describe any proposed arrangements for the prevention, minimisation and recovery of waste arising from the activity concerned,

Standard Operating Procedures (SOP's) will be put in place to ensure that all inert waste imported to site for recovery will be subject to comprehensive waste acceptance, inspection and sampling procedures

All waste accepted for recovery will undergo a site pre-approval procedure.

Only suitable material will be permitted to be accepted in the facility (i.e. inert soil and stones and river dredging spoil).

The existing workshop will be utilised as a quarantine area. Any non-natural materials in the consignment will be manually removed where possible and transferred to the appropriate waste skip for disposal at an appropriate facility.

Refer to Response 1.(i) above with respect to further details on Waste Acceptance/Rejection procedures.

Waste oils, batteries, scrap metal, etc., will be removed from site for recycling by approved licensed contractors. A licensed waste collection contractor will remove any domestic waste generated on site and requiring disposal to a licensed waste management facility. A record of all waste removal will be kept in the site office.

1.(o) describe any proposed arrangements for the off-site treatment or disposal of solid or liquid wastes,

Refer to response to 1.(n) above.

1.(p) describe the existing or proposed measures, including emergency procedures, to prevent unauthorised or unexpected emissions and minimise the impact on the environment of any such emissions,

The operator is to put in place an Environmental Management System (EMS) which will address such matters as Emergency Preparedness & Response in dealing with accident and emergency situations resulting in effects on the environment.

An emergency contact number for out of hours will be prominently displayed at the site entrance and staff members will be available in the event of an emergency call-out.

It is considered that accidents and emergency situations resulting in effects on the environment is confined to possible emissions to groundwater in the event of a fuel spillage. The operator has put in place an emergency response procedure for hydrocarbon spills and appropriate training of site staff in its implementation. (Refer to EIAR Appendix 5.3.5).

It should be noted that significant emphasis has been placed on control and abatement measures to ensure there is no risk to surface and /or groundwater.

1.(q) describe the proposed measures for the closure, restoration, remediation or aftercare of the facility concerned, after the cessation of the activity in question,

A Closure Plan & Environmental Liability Risk Assessment has been provided in support of this application (Refer to Attachment 9.2.1).

In this case only inert soils and stones and river derived dredging spoil will be acceptable for recovery at the facility for recovery and phased restoration of part of a sand and gravel pit to a landform that will be in keeping with the surrounding landscape.

Clean closure is envisaged such that all plant is safely removed for reuse or recycling, and all wastes are removed off site at the time of closure for appropriate recovery or disposal. Monitoring undertaken should demonstrate that there are no outstanding environmental issues.

There will be no on-going requirement for environmental monitoring after recovery operations have ceased.

An aftercare scheme will be implemented with the aim of bringing the restored soils (and hence land) into a condition which does not need to be treated differently from undisturbed land in the same use.

Roadstone propose to carry out the reclamation works in accordance with the Green, Low Carbon, Agri-environment Scheme (GLAS). i.e. Consideration will be given through the land reclamation scheme to conservation of arable grass margins, conservation of solitary bees, coppicing and planting of native trees and hedgerows, establishment of species rich hay meadow.

A final site-inspection 6 months after site closure will be carried out to ensure that the final site restoration scheme implemented is functioning and progressing as required.

1.(r) in the case of an application in respect of the landfilling of waste, give particulars of –

(i) such financial provision as is proposed to be made by the applicant, having regard to the provisions of Articles (7)(i) and (8)(a)(iv) of the Landfill Directive and section 53(1) of the Act, and

(ii) such charges as are proposed or made, having regard to the requirements of section 53A of the Act,

A Closure Plan & Environmental Liability Risk Assessment has been provided in support of this application (Refer to Attachment 9.2.1). Details with respect to Financial Provisions are addressed through this submission.

It is evident from the above description (Refer to Response to 1.(q)) given the relatively short-term measures necessary to close the site satisfactorily, that there will be no environmental liabilities once closure, decommissioning and residuals management are completed, and so only a closure plan is considered necessary.

The Company are in position to meet any financial commitments or liabilities that may have been or will be entered into or incurred in carrying on the activity to which the Waste Licence Application relates, or in consequence of ceasing to carry out that activity.

It is acknowledged that as a typical condition of any waste licence that the Agency may amend the licence at any time in certain circumstances in accordance with section 42B of the Waste Management Act 1996 as amended, to require, or not require as the case may be, the putting in place of a financial provision to incorporate costings for CRAMP and/or Environmental Liabilities Risk Assessment. This amendment may be implemented by the Agency in the event of an incident that creates a significant residual environmental liability or where the environmental risk profile changes on site.

Roadstone Ltd has estimated the closure and restoration/ aftercare requirements (€157,388). Roadstone, if deemed necessary will put in place a secure fund, and/or on

demand performance bond. The form and value of the financial provision being subject to agreement with the EPA.

The Closure Plan will be reviewed and updated annually as part of the Annual Environmental Report submission to the EPA.

1.(s) state whether the activity is for the purposes of an establishment to which the European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2000 (S.I. No. 476 of 2000) apply,

The European Communities (Control of Major Accident Hazards involving Dangerous substances) Regulations, 2000 (S.I. No. 476 of 2000) do not apply as the establishment will only accept inert material for recovery.

1.(t) in the case of an activity which gives rise or could give rise to an emission into an aquifer containing the List I and II substances specified in the Annex to Council Directive 80/68/EEC of 17 December 1979, describe the existing or proposed arrangements necessary to give effect to Articles 3, 4, 5, 6, 7, 8, 9 and 10 of the aforementioned Council Directive,

In this case only inert soils and stone, and river dredge spoil material is to be accepted at the facility for recovery and phased restoration of a sand and gravel pit to a contoured landform that will be in keeping with the surrounding landscape.

Based on all available environmental data, the overall risk to groundwater and surface water from the fill is low and the will not affect the status of the local surface water bodies (River Bride and River Lee) and groundwater body (Ballincollig).

It is not anticipated that any List I and List II substances will be discharged to groundwater from the inert Waste Recovery Facility.

Environmental Impact Assessment Report (EIAR)

An Environmental Impact Assessment Report (EIAR) has been submitted in support of the licence application. The likely significant effects of the activity are summarised in the following Table.

Table 3 EIAR – Summary of Likely Significant Effects

Environmental Factor	Likely effects identified	Brief description of effect	Mitigation measures proposed to control effect
Population & Human Health	The most likely effects are due to dust, noise and traffic.	They are more fully described in their respective EIAR Sections (See below). The restoration works will positively impact on the environment by returning these lands to beneficial use.	Mitigation measures are described in the respective EIAR sections (See below). An EMS including EMP and Environmental monitoring will be put in place. The site will be restored in accordance with the phased restoration scheme and thus integrated back into the surrounding landscape with the attendant improvement to the visual amenity and aesthetics of the area.
Biodiversity	The impact will be considerable in local terms. Site activities will not result in any loss of heritage values in the locality. The change will be: - positive (land use will be beneficial grassland) and - negative (loss of open habitats).	Cork Harbour SPA (Site Code 4030) is located approximately 20km to the east. There is no likelihood of significant ecological effects from this development on any of the sites in the Natura 2000 network or on their conservation objectives. The site does not contain items of particular ecological interest as far as is known but the successional stage of open scrub that occurs within the worked-out areas of the quarry has local biodiversity value, particularly in such agricultural surroundings. The site will be restored in accordance with the approved restoration scheme, and thus integrated back into the surrounding landscape.	The restoration plan involves the progressive backfilling of the quarry void on a phased basis, and thus integrated back into the surrounding landscape. Roadstone propose to carry out the reclamation works in accordance with the principles of the Green, Low Carbon, Agri-environment Scheme (GLAS). i.e. Consideration will be given during the land reclamation scheme to conservation of arable grass margins and solitary bees, coppicing and planting of native trees and hedgerows. The applicant as part of their Site Pre-Approval Procedure will only accept material from pre-approved sites where an appropriate invasive species risk assessment has been carried out by a qualified person. Restoration will include the removal of all machinery and structures and the smoothing of the contours to facilitate the establishment of grassland and grazing animals. The proposed development will be subject to an EPA Waste Management Licence. As such a Closure and Restoration/After Care Management Plan (CRAMP) may be required as a condition of the Waste Licence.

Environmental Factor	Likely effects identified	Brief description of effect	Mitigation measures proposed to control effect
Land, Soils & Geology	The nature of the proposed SRF involves the importation and recovery of inert soil, stone and river dredge spoil, with placement of these wastes as backfill in the quarry.	The site of the SRF including the site infrastructure will be situated within the existing quarry extraction area and as such will have no impact on virgin soils, sands and gravels, which have already been stripped, disturbed or extracted. As a result of backfilling using the inert soil, stone and dredge spoil the proposed SRF will contribute to the reinstatement of the quarry site, and thus will have a permanent significant positive effect. It is considered that as the proposed development is within an existing quarry that there will be an imperceptible impact on Land, Soils and Geology associated with construction activities. In terms of impacting on the groundwater vulnerability of the site, the importing of the inert fill will have a positive effect on the site in that the groundwater vulnerability rating will be lower. The worst-case scenario would be an impact on groundwater quality resulting from importation of contaminated soil and stones where waste acceptance procedures were not followed. Worst case impacts are only likely to slightly alter the groundwater quality locally. These minor local effects are not expected to compromise groundwater quality with respect to groundwater or drinking water regulations.	Standard Operating Procedures (SOP's) will be put in place to ensure that all inert waste imported to site for recovery will be subject to comprehensive waste acceptance, inspection and sampling procedures All waste accepted for recovery will undergo a site pre-approval procedure. Only suitable material will be permitted to be accepted in the facility (i.e. inert soil and stones and river dredging spoil). The existing workshop will be utilised as a quarantine area. Any non-natural materials in the consignment will be manually removed where possible and transferred to the appropriate waste skip for disposal at an appropriate facility. Progressive restoration involving grass seeding of restored area's will be carried out on a staged basis to reduce the effects of soil erosion and windblown dust, to aid ground stabilisation, and as an effective means of weed control. Environmental monitoring of local groundwater and surface water.
Water	Groundwater Quality	The primary sources of impact is the infilling of the void with inert soil and stone and river dredging spoil whereby the primary potential hazards are suspended solids, leaching and spillages, and accidental discharges of potential pollutants to the local surface waters and groundwater causing a deterioration in water quality. It should be noted that the proposed infill material is to be inert soil and stone and therefore no harmful/toxic contaminants are expected to be present. During infilling there will no pathway for surface water to leave the site other than by recharging into groundwater.	To minimise any impact on the underlying subsurface strata from oil and fuel spillages, the following mitigation measures are proposed: • A hard-stand with drainage to oil interceptor will be provided as a designated refuelling area. • All plant and machinery will be serviced before being mobilised to site, and regular leak inspections will be completed during the backfilling works; • No plant maintenance will be completed on site, any broken-down plant will be removed from site to be fixed; and,

Environmental Factor	Likely effects identified	Brief description of effect	Mitigation measures proposed to control effect
		Infilling of the site with inert soil and river dredging spoil should pose a low risk to groundwater quality regardless of the vulnerability rating as no harmful contaminants will be present. Worst case impacts are only likely to be a slightly alteration of the groundwater quality locally. These minor local effects are not expected to compromise groundwater quality with respect to groundwater or drinking water regulations.	• An emergency spill kit with oil boom, absorbers etc. will be kept on site for use in the event of an accidental spill. Management of surface water runoff and mitigation of surface water runoff impacts will be undertaken as follows: • Infilling will only be undertaken when the groundwater level is at or below the base of the pit (i.e. infilling will not be completed during very wet periods when the pit floor can become submerged with groundwater); • Prior to pit floor backfilling the existing residual sand and gravel in the floor of the pit will be levelled to ensure there is no potential for ponding or exposed groundwater during the backfilling operations; • Runoff collected within the pit will be routed in a temporary sump and allowed to recharge into the ground via a percolation area; and, • The infilled area will be seeded for establishment of grassland at the soonest opportunity to avoid erosion. These mitigation measures will ensure no significant impacts on local surface waters will occur. Standard Operating Procedures (SOP's) will be put in place to ensure that all inert waste imported to site for recovery will be subject to comprehensive waste acceptance, inspection and sampling procedures. Continued implementation of Surface & Groundwater Monitoring Programs.
Climate	The development is not expected to affect the local climate and/or microclimate of the area,	It is considered that following completion of the backfilling works there will be a slight to imperceptible positive impact with respect to climate due to restoration to agriculture.	There is no requirement for mitigation or monitoring within this development proposal in respect of climatic issues.
Air Quality	The operational phase is likely to produce fugitive emissions of dust .	The impacts of any dust deposition from the operations will be direct, of short duration, temporary and largely confined to the site area. It is expected that there will be imperceptible neutral impact with respect to local amenity and residential receptors as a result of the development.	Progressive restoration of the quarry over time will also reduce the area of exposed ground within the existing quarry. Mitigation measures are already in place with respect to the quarry to reduce dust emissions, to aid fugitive dust reduction, and to ensure that the operations remain within the stated thresholds. The company has in place an Environmental Management System (EMS) covering the

Environmental Factor	Likely effects identified	Brief description of effect	Mitigation measures proposed to control effect
			entire quarry that sets out procedures to follow to ensure emissions are kept to a minimum. A number of measures have/will be adopted to minimise dust emissions to the atmosphere from general site activity, internal haulage and land reclamation operations as follows: • In accordance with condition No. 14 of Planning Permission (QR19 06/11798 & PL04.225332) a fixed water spray system has been installed to include the access road and internal roads, • During dry weather the haul roads and tipping area will be sprayed with water to dampen any likely dust blows. • A mobile water browser is provided in periods of dry or windy weather to cover locations where it is impractical or inappropriate to use a fixed water spray system. • Consideration will be given to location of mobile plant so as to ensure that any principle dust sources cannot adversely affect sensitive off-site locations. • A wheel wash facility will be installed on site and all vehicles required to pass through the wheel wash on exiting the site. • Main site haulage routes within the site shall be maintained with a good temporary surface, as is the case at present. • All internal roadways will be adequately drained, to prevent ponding. • A road sweeper is available for use on site and adjacent sections of the N22 at least on a weekly basis and/or if a spillage occurs onto the public roadway. • Reclaimed areas will be seeded at the earliest appropriate time. • Regular servicing of facility plant & machinery will ensure that exhaust emissions are kept to a minimum. The existing Dust monitoring program will be maintained. In the long term the development will result in reduced potential for emissions of dust because the site will be restored and revegetated.

Environmental Factor	Likely effects identified	Brief description of effect	Mitigation measures proposed to control effect
Noise & Vibration	The principle concern in respect of noise emissions from the facility is the effect on residential amenity.	The principal noise sources at the application site will be intermittent noise generated by movement of a bulldozer and trucks on and off site. The noise environment in the immediate vicinity of the existing quarry site is determined primarily by noise from the National Primary road (N22), and low-level noise emissions from the vehicles and plant within the quarry. When this is taken into account along with the results of the noise prediction analysis, it is considered that the applicant will be able to ensure that the noise levels due to the SRF facility are within the accepted thresholds for this type of development.	In compliance with the current planning permission for the quarry development and environmental due diligence, the applicant has put in place a number of mitigation measures that will benefit the proposed development of the SRF. The type of mitigation techniques implemented to reduce noise are detailed below: • The site benefits from an established mature planted screening berm along the site boundary with the N22 Primary Route. • The provision of temporary screen banks to screen site activities from outside views as necessary. • The existing designated internal haul roads will be utilised to manage traffic entering and leaving the site to ensure that site traffic is removed from nearest noise sensitive receptors. • Internal haul road gradients will be kept as low as possible to reduce engine / brake noise from heavy vehicles. • All machinery used will be CE certified for compliance with EU noise control limits. • Regular maintenance of all plant and machinery is an integral part of site management and is important in helping to minimise noise impact. • All plant and machinery is switched off when not in use. • A noise management programme will be defined as part of the EMS. Mitigation measures are already in place at the site and included in the existing site EMS. Continual monitoring and measurement will ensure the effective application of these mitigation measures and ensure that activity at the quarry including the SRF will not result in any significant environmental impact.

Environmental Factor	Likely effects identified	Brief description of effect	Mitigation measures proposed to control effect
Landscape	The site is well screened from outside views by well-established planting and screening berms.	No significant views of the SRF site were identified. The results of the visual field survey have shown that views towards the SRF site from the north, east, south and west are screened from these vantages by intervening topography, hedgerows and vegetation. The proposed SRF is potentially more readily absorbed by the pre-existence of, and co-location within the quarry. Perimeter berms particularly along the northern site boundary with the N22 road have already been constructed as part of the quarry development works to screen the quarry including the proposed location of the SRF	The quarry is screened from outside views and nearest residences by intervening screening berms, topography and hedgerows. The boundaries are maintained with hedgerows and stock fencing. The proposed development is not visible being below surrounding ground level and the existing roadside and intervening hedgerows effectively screen the development from transient passing views along the N22 road. The restoration plan involves the progressive backfilling of the quarry void on a phased basis, using imported inert "soil and stone" and river dredge spoil" material. Roadstone propose to carry out the reclamation works in accordance with the Green, Low Carbon, Agri-environment Scheme (GLAS). i.e. Consideration will be given through the land reclamation scheme to conservation of arable grass margins, conservation of solitary bees, coppicing and planting of native trees and hedgerows, establishment of traditional hay meadow.
Cultural Heritage	None	As the proposed development is within the worked-out area of a sand and gravel pit no mitigation measures are required and there will be no impact on the archaeological, architectural or cultural heritage resource.	None required.
Material Assets	The most likely effects are due to dust, noise and traffic.	They are more fully described in their respective EIAR Sections (See above & below). The restoration works will positively impact on the environment by returning these lands to beneficial use. The restoration of the site to beneficial after-use will result in a permanent significant positive effect in the medium term.	Mitigation measures are described in the respective EIAR sections (See below). An EMS including EMP and Environmental monitoring will be put in place. The site will be restored in accordance with the phased restoration scheme and thus integrated back into the surrounding landscape with the attendant improvement to the visual amenity and aesthetics of the area.

Environmental Factor	Likely effects identified	Brief description of effect	Mitigation measures proposed to control effect
Traffic	Impact on roads, road users and nearest sensitive receptors	The proposed development consists of restoration of part (c. 6.7 ha) of existing quarry by importation of up to 300,000 tonnes per annum of inert soil and stones and river dredging spoil. This is considerably less than HGV traffic that was associated with the sand and gravel pit (QR19 06/11798 & PL04.225332) which was permitted to export 350,000 tonnes per annum by road. Sand and gravel is now transported by overland conveyor (P.A. Ref No. 066387, PL 04.220318) c.1.38km conveyor to the processing plant at Classis, Knockanemore, Ovens. Co. Cork. The traffic arising from the backfilling activities at the soil recovery facility was calculated to be 110 truck movements (laden/unladen) per day. The peak hour flow to and from the proposed recovery facility will be 35 vehicles. The significant effect of the facility traffic will be along the N22. The 2018 projected volume of traffic on the N22 generated by the Soil Recovery Facility will be an increase of 0.5% on total traffic volume and 1.8% on Peak Hour volume. The National Primary road N22 has sufficient capacity to cater for the 1.8% increase in proposed traffic generated by the Recovery facility. The existing Access from the proposed Soil Recovery Facility has sufficient capacity to cater for projected peak hour traffic to use the facility. The proposed turning movements at the N22/Access junction are of sufficient low volume not to cause any major interference in the free movement of traffic flow on the N22. The generated volume split of proposed Soil Recovery Facility related traffic will be 2% West along the N22 and 98% Eastwards along the N22.	A wheel washing facility is to be provided for all outgoing vehicles. Existing hard stand areas within the existing quarry to be maintained as rest up areas for trucks. There is the availability of visibility splays 215 x 3m on either side of the proposed facility entrance. These will be maintained free from vegetative growth on a regular basis. Warning signposting on the approaches to the proposed facility to be provided in accordance with the Traffic Signs Manual and in consultation with the Infrastructure section of Cork County Council. To improve the capacity of the entrance the existing hard-shoulder to the east should be converted to an auxiliary Left turning lane. The existing hard-shoulder to the west of the Facility entrance should be converted to an acceleration lane. This will provide an acceleration and deceleration lane for the facility. This will the also act as a road safety feature and increase the capacity of the junction by preventing the interruption of the free flow of the mainline traffic. This work to be provided in consultation with the Infrastructure section of Cork County Council