

# Attachment A.1.

## Non-Technical Summary

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## A.1. 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.

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

N&C Enterprises Ltd., Blackhill, Kill, Co. Kildare intends to apply to the Environmental Protection Agency for a waste licence for the operation of a waste recovery facility on lands at The Pit, Kilmeage, Naas, Co. Kildare (National Grid Reference N 7766 2319).

The nature of the development is the importation of inert soils, stone, and recovery of inert construction and demolition waste for the continued phased restoration of a sand and gravel pit to a contoured landform that will be in keeping with the surrounding landscape. It is proposed that up to circa 345,000 tonnes per annum of inert materials, subject to market demand, will be accepted to site. The site has the benefit of existing planning permission (P.A. Reg. Ref. 03/1773 & 12/373) for the above development.

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)).

In Compliance with Article 12 (1) (u) of the Waste Management (Licensing) Regulations, S.I. 395 of 2004 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.

**A.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\*:** N&C ENTERPRISED LTD

**Address:** The Pit

Kilmeage

Naas

Co. Kildare

**Tel:** 087 2591952

**Fax:** 045 890618

**e-mail:** clement@nandc.ie

***Name and Address for Correspondence***

**Name:** J Sheils Planning & 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:** N&C ENTERPRISED LTD

Blackhill,

Kill, Co. Kildare

**Tel:** 087 2591952

**Fax:** 045 890618

**e-mail:** clement@nandc.ie

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

**Name:** Kildare County Council

**Address:** Head Office

Áras Chill Dara

Devoy Park, Naas,

Co Kildare. W91 X77F

**Tel:** 045 980200

**Fax:** 045 980240

**A.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).

**A.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:** N&C ENTERPRISED LTD

**Address\*:** The Pit

Kilmeage

Naas

Co. Kildare

**Tel:** 087 2591952

**Fax:** 045 890618

**e-mail:** clement@nandc.ie

**National Grid Reference  
(8 digit 4E,4N)**

N 7766 2319

**A.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 importation of inert soils, stone, and recovery of inert construction and demolition waste for the continued phased restoration of a sand and gravel pit to a contoured landform that will be in keeping with the surrounding landscape.

It is proposed that up to circa 345,000 tonnes per annum of inert materials, subject to market demand, will be accepted to site. The site has the benefit of existing planning permission (P.A. Reg, Ref. 03/1773 & 12/373) for the above development. This figure is based on the maximum limit of 50 truckloads per day permitted (Condition No. 38 P.A. Reg. ref. 03/1773. This is the maximum amount of material that can be imported to site.

Whilst it is difficult in the current economic climate to forecast demand due to a number of variables including availability of inert materials generated by construction activity; scale, duration and location of construction projects; it is considered that the average will be closer to 250,000 tonnes per annum.

The lands have undergone partial restoration under Waste Management Permit No. 126/2003. It is estimated that c. 440,000 tonnes of inert soil and stone and construction and demolition waste was imported to site under the terms of the previous waste permit.

The backfilling/restoration at Kilmeage is to be carried out in accordance with the agreed landscaping plan submitted to Kildare Co. Council. The phased scheme for final restoration of the area is shown by Figures D.1.1 to D.1.4.

The volume of material required to be imported to the site to complete the proposed restoration scheme is shown below.

It is estimated that c. 20,000 tonnes per annum of construction and demolition waste will be imported to site. Due to relatively small volumes it is likely that a mobile crusher/screening unit will be mobilised to site on a campaign basis and/or 3 monthly intervals. Recycled material (subject to reaching end of waste status (Article 28)) will be used for internal haul roads and/or dispatched offsite.

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**Table H.1.1 Volume of Material to be Imported for Restoration Works at Kilmeage Pit**

Phase	Void Space		Life Span		Depth of Fill		Comments
			345,000 tpa	250,000 tpa	Average <sup>4</sup>	Maximum <sup>5</sup>	
	m <sup>3</sup>	tonnes <sup>1</sup>	Years <sup>2</sup>	Years <sup>3</sup>	m	m	
<b>1A</b>	<b>11,907</b>	<b>23,814</b>	<b>0.1</b>	<b>0.1</b>	<b>5.2</b>	<b>15</b>	Remedial works required to support the eastern boundary by banking of engineering fill material against the quarry face
<b>1B</b>	<b>27,557</b>	<b>55,114</b>	<b>0.2</b>	<b>0.2</b>	<b>4.9</b>	<b>18</b>	As above including infill of old access road to pit floor. A new access is to be constructed towards the centre of the site.
<b>1C</b>	<b>50,609</b>	<b>101,218</b>	<b>0.3</b>	<b>0.4</b>	<b>8.2</b>	<b>17</b>	As above.
<b>1D</b>	<b>34,784</b>	<b>69,568</b>	<b>0.2</b>	<b>0.3</b>	<b>4.0</b>	<b>17</b>	Infilling of area between new main internal access road and western boundary. Eastern boundary to be backfilled/graded to c. 1:2 slope.
<b>2A</b>	<b>117,342</b>	<b>234,684</b>	<b>0.7</b>	<b>0.9</b>	<b>8.5</b>	<b>17</b>	Backfilling of south-eastern corner to final restoration profile.
<b>2B</b>	<b>124,916</b>	<b>249,832</b>	<b>0.7</b>	<b>1.0</b>	<b>9.4</b>	<b>31</b>	Backfilling of northern corner to final restoration profile.
<b>3A</b>	<b>182,148</b>	<b>364,296</b>	<b>1.1</b>	<b>1.5</b>	<b>8.4</b>	<b>20</b>	Backfilling of Bottom of pit floor to 114 mAOD.
<b>3B</b>	<b>172,064</b>	<b>344,129</b>	<b>1</b>	<b>1.4</b>	<b>6.4</b>	<b>24</b>	Backfilling to 122 mAOD.
<b>4</b>	<b>262,409</b>	<b>524,817</b>	<b>1.5</b>	<b>2.1</b>	<b>5.6</b>	<b>32</b>	Final Restoration
<b>Totals</b>	<b>983,736</b>	<b>1,967,472</b>	<b>5.7</b>	<b>7.9</b>	<b>6.7</b>	<b>32</b>	

**Notes:** 1. Assumes conversion factor of 2 tonnes/m<sup>3</sup> for inert soils and stones (allowing for compaction and settlement). This is based on JSPE Ltd's experience and other operators in the sector.

2 Assumes 345,000 tonnes recovered per annum (subject to market conditions). This figure is based on the maximum limit of 50 truckloads per day permitted (Condition No. 38 P.A. Reg. ref. 03/1773).

3. it is considered that the average fill rate will be closer to 250,000 tonnes per annum.

4. Average fill depth for Phase of development.

5. Maximum overall fill depth for phase since commencement of operations.

**A.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)).

**A.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,**

Waste material	EWC Code	Quantity		On-site recovery/disposal (Method & Location)
		Tonnes / month	m <sup>3</sup> / month	
Concrete	17 01 01	1,670	1,113	Will be used to construct haul roads and hardstanding areas on site and/or processed for secondary aggregates
Bricks	17 01 02			As Above
Tiles & Ceramics	17 01 03			As Above
Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	17 01 07			As Above
Track ballast other than those mentioned in 17 05 07	17 05 08			As Above
Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	17 09 04			As Above
Soil and stones other than those mentioned in 17 05 03	17 05 04	20,833-27,083	10,417-13,542	Used to restore sand & gravel pit workings
Dredging spoil other than those mentioned in 17 05 05	17 05 06			Used to restore sand & gravel pit workings

**A.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 soils and stone, and inert construction and demolition waste. As such the material does not undergo any form of processing involving the use of chemicals or additives.

The water supply for the site office and wheelwash is met by an existing borehole on site. On days requiring dust suppression water usage would amount to 5 to 10 m<sup>3</sup> 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. The overall fuel use will amount to about 30,000 litres/annum. The mobile double skinned (integrated bunding) fuel bowser will have a capacity of c.750 litres and will be refueled weekly.

An existing single phase underground electricity supply provides for lighting and heating of the office. Energy requirements are low equivalent to a small commercial property.

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

The Site Infrastructure Plans (Refer to Figures D.1.1 to D.1.3) indicate the location of all activities and identifies all buildings and facilities at the Recovery Facility.

Materials to be recovered will only be accepted from approved Contractors who are aware of the need for and who undertake strict segregation and sorting of waste prior to transporting it to the application site.

All truck loads entering the site will be given a preliminary visual inspection on entering the site. If the material is not considered acceptable the haulier is refused entry and directed to an appropriate Waste Management Facility.

Each truckload will be weighed on the weighbridge, characterised by material type and assigned an EWC code. These details along with the date, time, producer and haulier, vehicle number, site of origin will be recorded electronically and available to view on request.

Accepted materials will be subject to a second inspection after each load is tipped at the restoration infill area within the site. Should a load of material indicate contamination of non-inert material on inspection, the material will be reloaded and the driver instructed to remove the load offsite to an approved facility.

Occasionally a load will contain minor contaminants (e.g. plastics, rebar, wood and paper). These items will be removed on inspection by a site operative and stored in a designated quarantine hardstand area pending removal offsite by a licensed waste disposal contractor to an appropriate disposal facility.

Following the second inspection the material will be accepted and placed within the restoration (placement by bulldozer/excavator) area or in the case of topsoil placed in temporary storage awaiting final placement.

Restoration of the sand and gravel pit is to be carried out in accordance with the scheme submitted under Planning Permission P.A. Ref. No. 1773/03.

The lands have undergone partial restoration under Waste Management Permit No. 126/2003. It is estimated that c. 440,000 tonnes of inert soil and stone and construction and demolition waste was imported to site under the terms of the previous waste permit.

The lands are to be restored to forestry/agricultural use by importation and recovery of inert materials in accordance with a phased restoration scheme. It is the intention to develop them for agricultural/ forestry use.

A bulldozer will be used to appropriately grade and compact the material to the desired profile as shown by the detailed plans and sections (Refer to Figures D.1.1 to D.1.6).

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.

Redundant structures, plant equipment and stockpiles will be removed from site on cessation of pit activity.

It is estimated that c. 20,000 tonnes per annum of construction and demolition waste will be imported to site. Due to relatively small volumes it is likely that a mobile crusher/screening unit will be mobilised to site on a campaign basis and/or 3 monthly intervals. Accepted material will be directed to the appropriate stockpile for subsequent recovery/processing through the facility.

Recycled material (subject to reaching end of waste status (Article 28)) will be used for internal haul roads and/or dispatched offsite.

### **Dust Abatement**

A number of measures have been adopted to minimise dust emissions to the atmosphere from general site activity, internal haulage, processing and tipping operations as follows:

- During dry weather the haul roads and stockpiles will be sprayed with water to dampen any likely dust blows. A water bowser will be maintained on site for this purpose.
- 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.
- Static and mobile wet dust suppression systems will be located at strategic points in the process if required.
- Drop heights will be kept to a minimum by using short conveyors and maintaining stocks under the head drum load out points.
- The site access road between the site entrance and wheel wash has been provided with an asphalt surface. There is no evidence of mud and debris being carried out on to the public road.
- Imported clean construction and demolition waste (concrete and brick) will be used to construct internal haul roads as required.
- A wheel wash facility has been installed on site and all vehicles are required to pass through the wheel wash on exiting the site.
- A sprinkler system has been installed on the site access road and is in operation during periods of dry weather.
- 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 tractor with a road sweeper attachment will be provided to ensure that the site entrance and adjoining public roadway is regularly cleaned. The sweeper will be readily available at short notice to sweep up any materials which may accidentally fall onto the public roadway.
- Suitable vegetation is to be provided on restored areas at the earliest opportunity.

**Surface Water Abatement**

There are no significant surface water features at or in the vicinity of the site. There are no local streams or rivers that can be impacted by the proposed development.

There will be no discharge of surface water run-off from the site. No surface water monitoring is proposed as there are no natural water features at or close to the site.

**Ground/Groundwater Abatement**

In order to minimise the risk of importing and introducing contaminated soil to the application site, management systems will be introduced to establish the source of imported materials in advance and to confirm that they are inert and in compliance with the sites acceptance criteria.

During backfilling of the pit, all temporary surfaces will be graded (shaped to formed suitable runoff in desired directions) to facilitate over-ground run-off of surface water, thereby minimising the volume of rainfall percolating through the backfilled material. This will further reduce any residual risks of any potential contaminants leaching into the soil and bedrock (or groundwater).

In order to confirm that there are no residual risks to in-situ soil or bedrock, monitoring of groundwater quality will continue for the duration of the pit void backfilling works and for a short aftercare period.

In order to maximise the future agricultural potential of the restored land, a minimum 150mm thick layer of topsoil and 300mm thick layer of subsoil should be placed over the backfilled materials. The final landform will also be graded so as to facilitate over-ground run-off of surface water to the pond area where the runoff will infiltrate to the groundwater.

Suitable nutrient application planning for the restored lands will be developed by an agricultural advisor in order to ensure that the restored lands are not over fertilised while grassland is being established at the restored surface.

In order to mitigate against the risk of pollution to groundwater and surface water occurring during operation of the site, the following management measures will be included:

- wherever possible a traffic management system will be put in place to reduce the potential conflicts between vehicles, thereby reducing the risk of a collision;
- a site speed limit would be enforced to further reduce the likelihood and significance of collisions;

- all plant would be regularly maintained and inspected daily for leaks of fuels, lubricating oil or other contaminating liquids/liquors;
- refuelling of vehicles would either be undertaken on the sealed hardstand area adjacent to the maintenance shed or from a mobile double skinned fuel bowser in order to minimise the risk of uncontrolled release of polluting liquids/liquors;
- maintenance of plant and machinery would be undertaken in the existing covered workshops or off-site, as appropriate, to minimise the risk of uncontrolled release of polluting liquids;
- spill kits will be made available on-site to stop the migration of any accidental spillages, should they occur;
- the flow path for the spring on the floor of the pit will be maintained by placing a stone drain from the spring emergence to the recharge point in the north of the pit. This will maintain this flow path and prevent backing up of the groundwater flow;
- the provenance of imported waste (inert soil) loads should be recorded and be visually inspected at the site in accordance with a detailed Material Acceptance and Handling Plan. Where possible, imported soils should be tested to confirm they are inert prior to deposition at site; and,
- The key issue with recharges to maintaining the groundwater flow regime below the site is the requirement to maintain a flow link between the spring emergence and the pond in the northern corner of the pit where the spring water recharges back into the ground. In order to maintain this pathway a French drain will be placed with a land drain core, between the spring emergence and the northern recharge area. The drain will be covered with terram, and covered with at least 2m of natural site won sand and gravel. The fill material will be placed over this drain and site won subsoil cover.

Groundwater sampling and monitoring will continue as long as backfilling activities continue and for a short period thereafter.

### **Noise Abatement**

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.

A number of noise containment measures are proposed:

- The provision of temporary peripheral screen banks to screen site activities from outside views as necessary.
- General site activity will be within the existing pit and below the level of the nearest residences.
- The use of designated haul roads to ensure that site traffic is removed from nearest noise sensitive receptors.
- Regular maintenance of all plant and machinery is an integral part of site management and is important in helping to minimise noise impact.
- All machinery used will be CE certified for compliance with EU noise control limits.
- Other further noise-reducing modifications for any machinery will be fitted wherever practical (e.g., rubber – decked screens, rubber chute linings, etc.)
- Internal haul road gradients will be kept as low as possible to reduce engine / brake noise from heavy vehicles.
- A noise management programme will be defined as part of the EMS.

It is proposed that noise monitoring will be carried out at three noise monitoring stations (N1 to N3) in the vicinity of the nearest noise sensitive properties (Refer to Figure F 1) in accordance with any monitoring programme agreed with the EPA.

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.

**A.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 only waste to be accepted at the facility for recovery comprises inert soils and stone, and inert construction and demolition waste.

An Environmental Management System is proposed to be put in place with ongoing environmental monitoring of noise, dust and groundwater on site. 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 F). 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 continue to be operated in accordance with any conditions attached to the licence and the landfill directive so as not to cause environmental pollution.

The only waste to be accepted at the facility for restoration of the lands will comprise inert soils and stone, and inert construction and demolition waste. As such 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.

The continued 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 (N&C Enterprises Ltd) 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.

N&C Enterprises Ltd is an established family run business based in Blackhill, Kill, Co. Kildare. Mr Clement Gavin – Facility Manager will be responsible for the overall management of the facility including implementation of the proposed Environmental Management System. The facility manager has over 23 years' experience in the extraction/inert waste management industry including managing the previous backfilling of the site in accordance with Waste Management Permit (WMP No. 126/2003).

A Closure Plan & Environmental Liability Risk Assessment has been prepared for the proposed Inert Waste Recovery Facility at Kilmeage Pit (Refer to Attachment K.1.2.1). Details with respect to Financial Provisions are addressed through this submission.

N & C Enterprises Ltd will make the necessary financial provision to cover the closure and restoration/ aftercare requirements. N&C Enterprises are considering either putting in place a secure fund and/or on demand performance bond. The form and value of the financial provision will be subject to agreement with the EPA following grant of the Licence.

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.

The only raw materials used on site are diesel, hydraulic oil and engine oil which will used to operate diesel powered plant on site. Electricity will be used on site to power the office, site office, on site lighting and security camera. Energy requirements are low equivalent to a small commercial property. Energy efficiencies will be achieved by using modern plant and equipment and servicing the equipment on a scheduled basis.

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.

**A.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 inert construction and demolition waste. 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 loading and processing operations. However, the effect of wind is also

an important factor in dust generation and problems may arise at reclamation workings when both factors arise simultaneously. The impact of fugitive dust will be direct, temporary and non-cumulative and largely confined to the application site.

### **Surface Water**

As the only material to be imported to site is “Soil and stone” and inert construction and demolition waste there will be no source of possible contamination of surface waters. The natural drainage pattern existing on site means that rain water falling on the site percolates through the existing soil strata (sand and gravel) to the underlying bedrock. The existing drainage pattern is expected to remain unaltered following cessation of the reclamation operations.

The wash-water from the existing wheel-wash is recycled within a self-contained holding tank with overflow to settlement tank. The tank is periodically cleaned out and the dried silt incorporated within the restoration scheme.

There are no surface water courses adjoining the site. Surface water-off within the site percolates to ground through the floor of the sand and gravel pit into the underlying bedrock. There is no discharge of surface water run-off from the site.

### **Sewer**

On site activities will not discharge to any sewerage system. It is proposed to continue using the existing toilet facility which discharges to a c. 2m diameter holding tank to the rear of the site office. The holding tank is periodically emptied and disposed of offsite by a licensed waste disposal contractor to an appropriate disposal facility.

### **Groundwater**

Given the hydrogeological setting, it is considered that the proposed development has the potential to impact on groundwater in terms of both the groundwater quality and the groundwater flow regime.

During the development and operation of the site there is a risk of groundwater pollution from the following potential sources:

- Accidental spillage of fuels and lubricants by construction plant placing the inert fill and other operational procedures;
- Increase in suspended solids and potential for contaminated runoff entering groundwater during development of the site; and,
- Rogue loads of contaminated material being deposited at the site.

Without mitigation, or consideration of operational procedures, infilling the void on the pit floor with low permeability inert fill material has the potential to create a low permeability zone or zones and therefore impair recharge/infiltration. This has potential to alter the groundwater recharge patterns at the site.

A detailed Geological and Hydrogeological Assessment has been carried out as part of the Waste Licence Application. This report assesses the potential impacts of the proposed restoration infilling on the environment and provides suitable mitigation measures for the proposed extraction works; and input into developing the restoration plan for the pit in terms of minimising both potential hydrogeological and hydrology impacts (Refer to Attachment I.2.1).

## Noise

The main source of noise and vibration on site is from:

- Movement of trucks on internal haul roads and tipping of material
- Bulldozer placing and grading the infill material
- Processing Plant

Given the nature of the development, the location of the above will vary dependent on area of site being restored (Refer to Figures D.1.1 to D.1.4 Site Infrastructure Plans).

It is considered based on both recent and historical monitoring results that the proposed continuance of the restoration of the pit can be carried out between the hours of 08:00-18:00 Monday to Friday inclusive (excluding bank holidays) and 08:00-14:00 Saturdays as per condition No. 23 of existing planning permission P.A. Reg. Ref. 03/1773 and within the accepted EPA Daytime Emission Limit value of – 55dB LAr,T.

**A.1.(I) 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

The materials to be recovered are principally “soils and stone” and inert construction and demolition waste. 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 loading and processing operations. However, the effect of wind is also an important factor in dust generation and problems may arise at reclamation workings

when both factors arise simultaneously. The impact of fugitive dust will be direct, temporary and non-cumulative and largely confined to the application site.

A series of three Bergerhoff dust monitoring stations (D1 to D3) have been established on site. The results of recent dust monitoring show that the dust levels at the site boundary are within the recognised TA Luft dust deposition limit value of 350 mg/m<sup>2</sup> per day.

A number of measures have been adopted to minimise dust emissions to the atmosphere from general site activity, internal haulage, processing and tipping operations (Refer to Section A.1.(i) above).

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**

As the only material to be imported to site is "Soil and stone" and inert construction and demolition waste there will be no source of possible contamination of surface waters. The natural drainage pattern existing on site means that rain water falling on the site percolates through the existing soil strata (sand and gravel) to the underlying bedrock. The existing drainage pattern is expected to remain unaltered following cessation of the reclamation operations.

The wash-water from the existing wheel-wash is recycled within a self-contained holding tank with overflow to settlement tank. The tank is periodically cleaned out and the dried silt incorporated within the restoration scheme.

There are no significant surface water features at or in the vicinity of the site. There are no local streams or rivers that can be impacted by the proposed development.

There will be no discharge of surface water run-off from the site. No surface water monitoring is proposed as there are no natural water features at or close to the site.

### **Ground/groundwater emissions**

It is envisaged that the inert materials used for the restoration of the site will not cause a pollution risk to the ground/groundwater in the area of the site.

A detailed geological and hydrogeological assessment has been prepared as part of the Waste Licence application (Refer to Waste Licence Application I.2.1).

A site walkover survey was completed by Michael Gill of Hydro-Environmental Services on 16th November 2015. Following on from the initial walkover survey HES also completed trial pitting, groundwater well drilling, and groundwater sampling at the site as outlined below.

Site investigations included 15 no. trial pits carried out by HES on the 26<sup>th</sup> November 2015. In general, trial pit geology consisted of made ground with gravel fill. Subsoil encountered across the site was relatively consistent and comprised of soil and stones comprising brown and grey angular and rounded gravels and cobbles of limestone and sandstone in silty sand matrix, with broken blocks and bricks, and minor broken concrete and concrete pipe, with very occasional plastic, wire/metal, and timber fragments as is consistent with made ground. This fill material was imported to site for land restoration subject to Waste Management Permit No. 126/2003. The 2015 ground investigation at the site did not reveal any evidence of systemic soil contamination across the sand and gravel pit site.

2 no. groundwater monitoring wells were drilled at the site between 07<sup>th</sup> and 10<sup>th</sup> December 2015. These monitoring wells are intended to be permanent water level monitoring locations for the site. There is also one existing water well at the site (PW-01), and a spring (GW-01) that emerges on the floor of the pit.

4 no. water samples at locations PW1 (existing well), MW15-01, MW15-02, and GW1 (spring on the site) were taken by HES on the 16<sup>th</sup> December 2015. An additional sample was taken from MW15-01 on 8th March 2016.

Static groundwater level monitoring was recorded at the site in the on-site wells. Based on groundwater data levels from the 16th December 2015 groundwater flow direction at the site is in a south-easterly direction towards the River Liffey.

Groundwater data from the site indicates several parameters that are elevated above Groundwater Assessment Criteria. Many of the elevations occur on indicator parameters, e.g. EC, chloride, nitrate, ammonia, microbial pathogens, but there are also elevated concentrations of metals such as Boron (in MW15-01). There may be a combination of sources causing these elevated parameters, such as the fill material (from the permit backfilling phase), local septic tanks, or local land spreading of organic wastes.

In order to assess ongoing water quality in this area of the site it is important to continue to monitor local groundwater quality to establish seasonal trends. Sampling of well MW15-01 should be completed on a quarterly basis.

A number of measures have been proposed to minimise ground/groundwater emissions to the atmosphere from general site activity, internal haulage, processing and tipping operations (Refer to Section A.1.(i) above).

There are no significant residual impacts with respect to groundwater and/or surface water provided the appropriate mitigation measures are implemented. It is therefore considered that the siting of an inert recovery facility in this location is acceptable and that there will be no significant short term or long term impacts on groundwater and/or surface water.

### Noise

The lands are being restored to agricultural use by importation and recovery of inert materials in accordance with a phased restoration scheme. Designated internal haul roads will be used to direct site traffic to the current tipping area. A bulldozer will be used to appropriately grade and compact the material to the desired profile as shown by the detailed plans and sections (Refer to Figures D.1.1 to D.1.6). There will also be intermittent noise associated with the construction and Demolition processing operations.

Land use in the area to the west and southwest is largely residential, with some commercial use in close proximity to the pit. There is a row of single houses along the southern boundary of the site, and these face to the south on the local road. The land to the northeast and northwest is largely agricultural as shown by B.2.1. These residences are not open to view being shielded by existing hedgerows, boundary walls and a screening berm along the southern boundary.

It is evident from the above description that the site is not in an area to be considered as a "Quiet Area" as per the Agency definition (*Environmental Quality Objectives - Noise in Quiet Areas, (EPA 2003)*) given the proximity to urban, commercial and industrial development.

It is considered based on both recent and historical monitoring results that the proposed continuance of the restoration of the pit can be carried out between the hours of 08:00-18:00 Monday to Friday inclusive (excluding bank holidays) and 08:00-14:00 Saturdays as per condition No. 23 of existing planning permission P.A. Reg. Ref. 03/1773 and within the accepted EPA Daytime Emission Limit value of – 55dB LAr,T.

Whilst the above limit is considered acceptable with respect to general restoration works, elevated noise levels may be experienced at nearest residences during construction of temporary baffle mounds and restoration works along the southern and western boundaries. However, these works will be of a short-term nature and construction of baffle mounds will provide screening and attenuation of noise at the nearest noise sensitive receptors.

It is considered that an eight-week period per year would be more than adequate to undertake essential site preparation and restoration works and construction of baffle mounds at the southern and western boundaries and consider a temporary daytime noise limits of up to 70dB(A) LAeq 1h to be appropriate.

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. A number of noise containment measures are proposed (Refer to Section A.1.(i) above).

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

**Air**

A series of three Bergerhoff dust monitoring stations (D1 to D3) have been established on site as part of the baseline study for the Waste Management Licence Application. Refer also to EIS Section 3.1 - Air. The locations of the stations are shown on Environmental Monitoring Plan Figure F 1.

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<sup>2</sup>/day measured at the site boundaries and averaged over 30 days". This limit refers to total dust (using DIN method). It is proposed to carryout dust monitoring for the activity on a bi-annual basis.

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 regular dust monitoring to demonstrate that the development is not

having an adverse impact on the surrounding environment. 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**

There will be no discharge of surface water run-off from the site. No surface water monitoring is proposed as there are no natural water features at or close to the site.

### **Groundwater**

A number of measures are proposed in order to monitor any potential impact of the proposed operations on groundwater at the site.

At the present time, it is envisaged that groundwater sampling and testing will be undertaken on a bi-annual basis at the 3 No. groundwater monitoring wells. Groundwater levels in the wells will also be recorded on a bi-annual basis. The existing groundwater monitoring well locations are shown on Figure F.1.

Baseline sampling indicates elevated indicator parameters in MW15-01. In order to assess ongoing water quality in this area of the site it is important to continue to monitor local groundwater quality to establish seasonal trends. Sampling of well MW15-01 should be completed on a quarterly basis.

Groundwater samples will be tested for a range of physical and chemical parameters in order to assess water quality and detect possible contamination at the site.

Groundwater sampling and monitoring will continue as long as backfilling activities continue and for a short period thereafter.

### **Noise**

The operator has established an environmental monitoring programme to include noise monitoring.

It is proposed that noise monitoring will be carried out at three noise monitoring stations (N1 to N3) in the vicinity of the nearest noise sensitive properties (Refer to Figure F 1) in accordance with any monitoring programme agreed with the EPA.

It is proposed that the applicant shall carry out a noise survey of the site operations on at least an annual basis and bi-annually when undertaking works near the southern and western boundaries.

Refer to Section A.1.(l) above with respect to proposed emission limit values for noise with respect to the proposed site activities.

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.

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

Occasionally a load will contain minor contaminants (e.g. plastics, metal, wood and paper). These items will be removed on inspection by a site operative and stored in a designated quarantine area pending removal offsite by a licensed waste disposal contractor to an appropriate recovery/disposal facility.

No waste oil products are stored on site. Waste oils will be disposed of by a licensed waste contractor and removed off site. All oil barrels and lubricants will be stored on spill pallets/ spill trays. Spill kits will be maintained on site and the Company will put in place an emergency response procedure for hydrocarbon spills and appropriate training of site staff in its implementation.

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

Occasionally a load will contain minor contaminants (e.g. plastics, rebar, wood and paper). These items are removed on inspection by a site operative and stored in a designated quarantine area pending removal offsite by a licensed waste disposal contractor to an appropriate disposal facility.

**A.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 telephone contact list will be maintained at the site inspection office.

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. As such the following Emergency/Spill Response Procedures will be put in place.

The main risk associated with oil or chemical spills is the potential for the spill to enter drains, watercourses, soils and the ground water system, causing contamination and / or fire or explosion risk.

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 i.e.

- A mobile double skinned (integrated bunding) fuel bowser will be used to refuel mobile plant on site. The bowser will be provided with a spill tray and spill kit. The fuel bowser will be kept within an existing surfaced aggregate bay with surface runoff from the hard standing directed to a silt trap with discharge to ground via a Class I Full retention separator.
- No waste oil products are stored on site. Waste oils will be disposed of by a licensed waste contractor and removed off site.
- All oil barrels and lubricants will be stored on spill pallets/ spill trays.
- Spill kits will be maintained on site.
- Any inappropriate materials discovered (e.g. glass, plastic, timber, steel, etc) will be stored within the designated quarantine area awaiting removal off site by an approved waste collection contractor to an approved facility.

**A.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,**

The lands are to be restored to forestry/agricultural use by importation and recovery of inert materials in accordance with a phased restoration scheme (Refer to Figures D.1.1 to D.1.6).

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.

Redundant structures, plant equipment and stockpiles will be removed from site on cessation of pit activity.

A Closure Plan & Environmental Liability Risk Assessment has been prepared for the proposed Inert Waste Recovery Facility at Kilmeage Pit (Refer to Licence Application Attachment K.1.2.1).

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. The final restoration of the site will facilitate an agricultural after-use similar to that which existed prior to extraction works.

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.

**A.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 prepared for the proposed Inert Waste Recovery Facility at Kilmeage Pit (Refer to Licence Application Attachment K.1.2.1). Details with respect to Financial Provisions are addressed through this submission.

N & C Enterprises Ltd will make the necessary financial provision to cover the closure and restoration/ aftercare requirements. N&C Enterprises are considering either putting in place a secure fund and/or on demand performance bond. The form and value of the financial provision will be subject to agreement with the EPA following grant of the Licence.

N&C Enterprises Ltd are an established family run business. 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.

**A.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 only accepts inert material for recovery.

**A.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 inert construction and demolition waste 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.

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