An Bord Pleanála

Inspector's Report

ABP-309991-21

Development	Development and operation of an inert landfill facility to backfill the existing quarry to original ground level; progressive restoration of the backfilled quarry to long-term grassland / scrub habitat; establishment and operation of a construction and demolition waste recovery facility; installation and operation of a soil washing plant; and all associated site works.
Location	Ballinclare and Carrigmore townlands, Kilbride, Co. Wicklow
Planning Authority	Wicklow County Council
Applicant(s)	Kilsaran Concrete Unlimited Company
Type of Application	Application under Section 37E of the Planning and Development Act, 2000 (as amended)
Prescribed Bodies	• Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media • Health Services Executive (HSE)

Observer(s)	• Transport Infrastructure Ireland (TII) • Irish Water • Michael Higgins • Christopher Langheld • Ballinclare Alliance Co. Ltd. • Keith Hutchinson • Cllr. Pier Leonard and Cllr. Mary Kavanagh • Danny Haskins and Jessica Moss • Amanda O'Sullivan and others • Christian Osthoff and others • Pat King • Terry Hughes • Mike Carswell • Richard Woodroofe • James Hill • Colclough Byrne • The Resident, the Brambles • Jayne Dwyer • Michael Dwyer
Date of Site Inspection	11th February 2022
Inspector	Donal Donnelly

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1.0 Introduction

1.1. An application under the provisions of Section 37E of the Planning and Development Act, 2000 (as amended) was received by the Board from Kilsaran Concrete Unlimited Company. The application relates to the proposed development of an inert landfill facility to backfill an existing quarry, together with establishment of a construction and demolition waste recovery facility and the operation of a soil washing plant at Ballinclare and Carrigmore, Kilbride, Co. Wicklow.

1.2. The Board had previously decided on 26th February 2020 that the development in question falls within the scope of section 37A(2)(a) and (b) of the Planning and Development Act, 2000, as amended, and constitutes strategic infrastructure, necessitating an application directly to the Board (Ref: ABP-304735-19).

2.0 Site Location and Description

2.1. The subject site is located in the townlands of Ballinclare and Carrigmore in eastern Co. Wicklow approximately 2km north-west of Kilbride and 7km south-west of Wicklow town. The M7 is approximately 400m east of the site and there are local roads to the south-western and north-western sides of the site. The main access to the site is from the local road to the south-west. Wicklow County Council's Carrigmore Deport is situated to the west of the quarry and is accessed from the local road to the north-west.

2.2. The surrounding area is characterised by undulating rural landscape with a varied mix of agricultural fields, deciduous woodlands, scrub vegetation and forestry plantation. Potter's River flows to the north and east of the proposed development site and there are a number of other streams and drains in the vicinity. There are 13 dwellings within 500m of the application boundary. The National Botanic Gardens, Kilmacurragh are located approximately 1km to the south-west.

2.3. The site has a stated area of 32.5 hectares. The site contains an existing quarry void with an area of approximately 17.2 hectares, which has flooded since the cessation of quarrying activities in 2016. Settlement ponds are located to the west of the site and a concrete block yard was constructed recently.

2.4. There is another quarry situated approximately 400m to the south-west at Kilmacurra, which is understood to be abandoned. This quarry is a County Geological Site.

3.0 Proposed Development

3.1. Planning permission is sought for a period of up to 20 years for the following:

- Development and operation of an inert landfill facility to backfill the existing quarry to original ground level;
- Progressive restoration of the backfilled quarry to long-term grassland/ scrub habitat;
- Establishment and operation of a construction and demolition waste recovery facility at the pre-existing concrete block yard;
- Installation and operation of a soil washing plant at the former concrete/ asphalt production yard to recover sand and gravel aggregate from soil/ clay bound waste.

3.2. It is proposed to progressively backfill the quarry over four phases from west to east. Approximately 6,165,000 tonnes of inert waste and (non-waste) by-product, principally soil and stone, will be imported. Selected uncontaminated, undisturbed, natural soil waste and/ or by-product conforming to engineering specifications will be reused in the construction of the basal and side clay liners required for the inert landfill.

3.3. Hours of operation will be the same as that granted for quarrying under Reg. Ref: 14/2118 (08:00 hours to 18:00 Monday to Friday and 08:00 hours and 14:00 on Saturdays). Waste intake will be limited to 10 Saturdays per annum with maintenance work only permitted on other Saturdays.

3.4. The haul route to the site will be along the L1157. It is estimated that >90% of HGVs to the site will be from the direction of Dublin and north Wicklow, with less than 5% from Arklow and north Wexford. The proposed intake load of 150 per day matches the permitted limit of 150 exports loads for the pre-existing quarry use on site.

3.5. The proposal provides for the construction of an on-site (passive) wetland treatment system and attendant drainage infrastructure to treat surface water run-off / groundwater collecting in the sump / floor of the quarry area during landfilling operations and any surface water run-off from the C&D waste recovery area prior to its discharge off-site. Discharge will be to the Potters River which flows into Brittas Bay.

3.6. The proposed development also includes the continued use of existing site infrastructure and services; removal of any remaining fixed plant; installation of a new weighbridge; construction of an industrial shed; use of external paved areas for handling and storage of C&D wastes; reuse of shed for inspection and quarantine of wastes; upgrading and ongoing maintenance of internal haul routes; temporary stockpiling of topsoil pending reuse; and environmental monitoring.

4.0 **Planning History**

Wicklow County Council Reg. Ref: 14/2118

4.1. Permission granted to Kilsaran Concrete in January 2016 within an overall application area of 36 hectares, and all for a period of 25 years for:

- Continued use of permitted development under Reg. Ref: 07/45 for a period of 25 years including the existing quarry, stone extraction and processing, concrete and asphalt manufacturing facilities, and related ancillary buildings and facilities;
- Extension to the permitted quarry floor level of +1mOD over an extraction area of 16.5 hectares;
- Concrete block manufacturing plant (13.6m high approx) (c 362.1sqm) and a concrete block manufacturing yard (c.6225sqm);
- Aggregate washing plant (c 142.6sqm);
- Replacement of the existing septic tank with a proprietary effluent treatment system (Aeration Treatment Unit and two modular Puraflo);
- Increase product output from the quarry, from 70 to 150 loads per day, in line with market demand.

Wicklow County Council Reg. Ref: 07/45

4.2. Permission granted to SM Morris Ltd. in December 2007 for the following:

- Retention of existing stone quarry (13.414 ha) including extraction areas, processing areas, stockpiling areas, concrete products manufacturing plant, macadam and asphalt manufacturing plant, stone crushing and screening plant, waste recovery facility, car parking areas and ancillary buildings including offices, toilets, laboratory, maintenance workshop, control towers and cabins, aggregate screening and aggregate storage buildings, electricity substations and ancillary buildings (total 2088.28 sqm), together with septic tanks, weighbridge, truck wheelwash bay, floodlighting, oil and fuel storage tanks and water storage tanks.
- Proposed extension of a stone extraction area below the level of existing quarry floor to a level of 25m o.d. within existing quarry (6.634 ha).
- Proposed extension of existing quarry towards the west (10.605 ha) to a level of 25m o.d. into the townland of Carrigmore.

Section 261 Quarry Registration (Ref: QY/4)

4.3. Quarry with area of 13.4 hectares registered on 4th March 2005 and direction issued that a planning application and EIS shall be lodged (Reg. Ref: 07/45 above).

Section 261A Determination (Ref: S261A/QY/4)

4.4. Determined in August 2012 that quarry was in compliance with the EIA and Habitats Directives and no further regulatory controls were required.

Wicklow County Council Reg. Ref: 93/369 (PL27.092182)

4.5. Permission granted in 1994 for a macadam/ asphalt manufacturing plant and the retention of a septic tank.

Wicklow County Council Reg. Ref: 95/2380 (PL27.099861)

4.6. Permission granted for a concrete batching plant subject to condition that there shall be no discharges to Potters Stream.

Nearby Sites:

Wicklow County Council Reg. Ref: 17/866 (ABP-301135-18)

4.7. The Board upheld Wicklow County Council's decision to refuse permission for development comprising the importation and deposition of inert subsoil and topsoil for land profiling and re-contouring purposes including all ancillary site works at an existing agricultural holding of 7.53 hectares approximately 300m north of the proposed development site. The purpose of the work was to improve the site for agriculture. The reason for refusal stated as follows:

> *"Having regard to the nature of the proposed development, that is the raising of lands by means of filling with inert materials, and to its location in an area identified by the Office of Public Works and the Strategic Flood Risk Assessment appended to the Wicklow County Development Plan 2016-2022, as being at risk of fluvial flooding, the Board is not satisfied, on the basis of the information provided, that the proposed development would not cause or exacerbate flooding on adjoining lands contrary to national flood guidelines. Furthermore, the Board considered that the potential flooding could result in loss of biodiversity and habitats in the local area and considered that the proposed development would set an undesirable precedent for infilling of potential flood plain lands. The proposed development would, therefore, be contrary to the proper planning and sustainable development of the area."*

5.0 Policy Context

5.1. National Planning Framework, 2018

5.1.1. The National Planning Framework provides policies, actions and investment to deliver 10 National Strategic Outcomes (NSO) and priorities of the National Development Plan. The sustainable management of water, waste and other environmental resources is the main NSO that pertains to the proposed development. It is stated that the conservation and enhancement of the quality of these resources will become more important in a crowded and competitive world, as well as our capacity to create beneficial uses from products previously considered as

waste, creating circular economic benefits. It is a requirement to have adequate capacity and systems to manage waste, including municipal and construction and demolition waste in an environmentally safe and sustainable manner.

5.1.2. Chapter 9 of the NPF: Realising Our Sustainable Future recognises the need for resource efficiency and transitioning to a low carbon economy. With respect to waste management, National Policy Objective 56 seeks to *"sustainably manage waste generation, invest in different types of waste treatment and support circular economy principles, prioritising prevention, reuse, recycling and recovery, to support a healthy environment, economy and society."*

5.2. Regional Spatial and Economic Strategy for the Eastern and Midland Region

5.2.1. This document is a 12-year strategic regional development framework that will facilitate the delivery of the NPF. The Strategy supports the move to a more circular economy that will save resources, increase resource efficiency, and help to reduce carbon emissions. It is also recognised that the successful implementation of circular economy principles will help to reduce the volume of waste that the Region produces and has to manage and will assist in delivering the resource efficiency ambition of the Europe 2020 Strategy.

5.2.2. It is a Regional Policy Objective of the Strategy with respect to waste management (RPO 10.25) that *"development plans shall identify how waste will be reduced, in line with the principles of the circular economy, facilitating the use of materials at their highest value for as long as possible and how remaining quantums of waste will be managed and shall promote the inclusion in developments of adequate and easily accessible storage space that supports the separate collection of dry recyclables and food and shall take account of the requirements of the Eastern and Midlands Region Waste Management Plan."*

5.3. Wicklow County Development Plan, 2016-2022

5.3.1. It is a strategy of the Development Plan to promote and facilitate best practice in prevention, re-use, recovery, recycling and disposal of all waste and environmental emissions produced in the County. The Development Plan will help to guide the location of new facilities and services that are necessary to implement the Eastern–

Midlands Region Waste Management Plan (WMP) 2015-2021. The following objectives are relevant in this regard:

> *WE3 To facilitate the development of existing and new waste recovery facilities and in particular, to facilitate the development of 'green waste' recovery sites.*
>
> *WE6 To facilitate the development of sites, services and facilities necessary to achieve implementation of the objectives of the Regional Waste Management Plan.*

5.3.2. Appendix 1 of the Development Plan sets out Development and Design standards for different types of development. It is stated that in cases where it is proposed to reclaim, regenerate or rehabilitate old quarries (that were not subject to restoration as part of the grant of permission or licence) by filling or re-grading with inert soil or similar material, or to use worked-out quarries as disposal locations for inert materials, the acceptability of the proposal shall be evaluated against the following key criteria:

- the impact of the proposal on the landscape.
- any possible loss of biodiversity that may have developed in the worked-out quarry.
- the impact such proposals may have on natural ground and surface water flows or networks in the area and the potential to give rise to flooding or new surface water flows onto adjoining lands or roads.
- the suitability of the road network in the area to accommodate the traffic flows of heavy vehicles that may be generated.

5.3.3. It is also stated that applications for the development of commercial waste disposal or recycling facilities catering for the disposal or reuse of inert clean soils, clay, sands, gravels and stones shall only be permitted at appropriate locations and shall be subject to the following:

- It shall be for the disposal of inert clean material only.
- There shall be a proven need for the proposed development.

- The proposed development shall be in accordance with the policies set out in the Eastern-Midlands Region Waste Management Plan.
- The proposed development shall not result in adverse impacts on the landscape or unnecessarily interfere with natural landform and topography in any area, without detailed justification.
- Such facilities shall not give rise to significant adverse impacts on a designated Natura 2000 site, or interfere with a protected view or prospect, a public right of way, an existing or planned piece of strategic infrastructure, or an important tourist site.
- A development shall not be permitted if it has a detrimental impact on the amenity of adjoining residents, by reason of unacceptable levels of traffic, noise, dust, lighting or other impact resulting from the operation of the facility.
- A development shall not be permitted if it has a detrimental impact on the flora and fauna, ecology, ground and surface water, air quality, and geological/ archaeological heritage of the area.
- The development does not result in the creation of a significant traffic hazard and the road network is suitable and has the capacity for anticipated traffic levels.

5.3.4. It is noted that this policy relates to inert clean waste disposal only and that a detailed phasing programme for the importation of material should be provided.

5.4. Draft Wicklow County Development Plan, 2022-2028

5.4.1. The Third Chief Executive's Report on the Proposed Amendments to the Wicklow County Development Plan 2022-2028 was submitted to Members on 26th July 2022. It is anticipated that the report will be considered by Elected Members at a Council meeting in September 2022.

5.5. Eastern-Midlands Regional Waste Management Plan 2015-2021

5.5.1. The Eastern–Midlands Region Waste Management Plan (WMP) 2015-2021 provides the framework for solid waste management in the region and sets out a range of policies and actions to meet specified mandatory and performance-based targets. The WMP seeks to assist and support resource efficiency, waste prevention

initiatives, and a circular economy which is considered essential if the Region is to make better use of resources and become more resource efficient. The overall vision of the is to rethink the approach taken towards managing waste and that waste should be seen as a valuable material resource.

5.5.2. Construction and demolition waste is identified as a priority waste stream where it is recognised that alternative recovery options will be required due to the sharp decrease in the number of operational landfills in recent years. It is also stated that it needs to be considered if the placement of inert waste at many of the types of infill sites used in the past is an appropriate land-use strategy or the best use of a potentially recyclable material. In addition, it is recognised that concrete, stone and other masonry-type waste can be crushed and screened and used as a substitute for virgin quarried materials. Quarries in turn require large quantities of soil material to fill voids.

5.5.3. The following policies are outlined in Section 16.4.4 for Recovery – Backfilling:

E13. Future authorisations by local authorities, the EPA and An Bord Pleanála must take account of the scale and availability of existing back filling capacity.

E14. The local authorities will co-ordinate the future authorisations of backfilling sites in the region to ensure balanced development serves local and regional needs with a preference for large restoration sites ahead of smaller scale sites with shorter life spans. All proposed sites for backfilling activities must comply with environmental protection criteria set out in the plan.

5.6. A Waste Action Plan for a Circular Economy, 2020

5.6.1. This plan looks towards the preservation of resources by creating a circular economy by setting out a range of aims and targets for the State and the measures by which these will be achieved.

5.6.2. It is noted that construction activity has accelerated in recent years especially in the greater Dublin area and a number of major construction projects included in Project Ireland 2020 present huge potential in terms of preventing and recycling construction

waste. It is therefore considered vital that there is sufficient capacity for the recovery and/or disposal of the envisaged increased construction and demolition waste.

5.7. Natural Heritage Designations

5.7.1. The following designated sites are within 15km of the proposed development site:

Site Name	Site Code	Distance (nearest point to proposed development)
Glenealy Woods pNHA	001756	1.1km
Devil's Glen pNHA	000718	8km
Arklow Sand Dunes pNHA	001746	13km
Avoca River Valley pNHA	001748	10km
Ballinacor Wood pNHA	001749	11km
Wicklow Head pNHA	000734	8km
Vartry Reservoir pNHA	001771	13km
Wicklow Town Sites pNHA	001929	7.8km
Avondale pNHA	002093	5.8km
Wicklow Mountains SAC	002122	11.9km
Wicklow Reef SAC	002274	9.6km
Deputy's Pass Nature Reserve SAC	000717	1.65km
The Murrough Wetlands SAC	002249	7.9km
Vale of Clara (Rathdrum Wood) SAC	000733	5.5km
Magherabeg Dunes SAC	001766	6.1km
Buckroney-Brittas Dunes and Fen SAC	000729	6.9km
Wicklow Mountains SPA	004040	13km
Wicklow Head SPA	004127	8.3km
The Murrough SPA	004186	7.km

6.0 **Planning Authority Report**

6.1. Wicklow County Council submitted a report to the Board under Section 34E(4) setting out its views on the effects of the proposed development on the environment and the proper planning and sustainable development of the area. The main points raised in this report are summarised as follows:

Environmental Section

- Waste Management Section is in favour of the proposed development as it will infill a large, excavated void where naturally occurring asbestos was discovered, and provide a large and accessible inert soil facility along the N11, thereby reducing the need for small sites.

Roads Section

- Prefer to route HGV traffic along the L1157.
- Hedgerow will need to be maintained for sightlines either side of the site access.
- Happy in principle with the proposed upgrades to the L1157 subject to final details being agreed.
- Realistic scenario (assuming 70% articulated trucks [29t] and 30% tipper trucks [20t] would equate to 12.16 vehicles movements per hour or 121-122 vehicles per day based on a 10 hour working day and not 115 as reported by applicant.
- Capacity analysis should have been provided in the TIA to confirm that the road networks should be able to cater for the additional traffic, particularly along the L1157.
- Consistency needed in the number of working weeks throughout EIAR.
- Recommended conditions on limiting trips to the site; operation of a maximum 10 Saturdays per year; limitation of intake at 800,000 tonnes; improvement and maintenance of local road at applicant's expense; and agreement of advanced warning signage.

Executive Chemist

- Scale of operation comparable to previous quarry operation.

- Air, noise and water assessments and mitigation measures are noted and considered acceptable.
- Site is located in a prioritised area for action under River Management Plan – siltation identified as a pressure of Potters River. Drainage shall pass through effective silt traps.

Principle of development

- National, regional and local plans seek to ensure the development of sustainable approaches to waste management to achieve a more circular economy.
- Development is well located in terms of access to the national road network and will eliminate the pressure for smaller sites which have inherent issues in terms of loss of biodiversity and impacts on the road network.
- Given the existing character/ historic use, the restoration, and the need for facilities for disposal of inert materials and construction and demolition recycling, the proposal would ensure a sustainable approach to the management of waste streams in accordance with the policies set out in the Waste Management Plan and Development Plan.

Visual Impact

- Restoration of the lands will rehabilitate the area such that the lands will blend into the existing rural landscape.

Hydrology and Hydrogeology

- Mitigation measures are acceptable.
- Current Discharge Licence granted by Wicklow County Council in 2019 will be superseded by an EPA Waste Licence.

Traffic

- Subject to mitigation measures and restriction of traffic volumes to 150 per day/ 90 per Sat, proposal would be acceptable.

Amenity

- Having regard to the details submitted and to the site history and mitigation, the proposal will not have a negative impact on amenities of adjoining residents/ tourism facilities in terms of noise or dust.

Biodiversity

- Loss of existing water settlement lagoons will impact on smooth newt and common frog – loss will be offset by retaining some semi-natural waterbodies.
- Operations will ensure there is no negative impact on bird nesting/ destruction of eggs if found on quarry face.
- Proposed development will result in the positive benefit of rehabilitating the existing quarry, retaining water features in the long term and appropriate planting/ seeding to increase biodiversity.

Archaeology

- Undisturbed areas where soil stripping is undertaken should be monitored by an archaeologist.

Kilmacurragh House & Arboretum

- Given distance, vegetation and operations proposed, it is not considered there will be any negative impacts from noise or dust.

Environmental Impact Assessment

- Considered that the EIAR identifies and describes adequately the direct and indirect significant effects of the proposed development on each environmental factor and clearly sets out measures to avoid, prevent and reduce the impacts and all mitigation necessary.

Appropriate Assessment

- NIS concludes that the development will not result in negative effects on any Natura 2000 site.

Conclusion

- Development would accord with proper planning and sustainable development.

Conditions

- Conditions are set out to be considered by the Board in relation to mitigation, CEMP, development contributions, limitation of vehicle movements, road improvements and maintenance, advanced warning signage and completion of works.

7.0 Observations

7.1. Prescribed Bodies

7.1.1. The following nature conservation observations of the **Development Applications Unit** of the Department of Tourism, Culture, Arts, Gaeltacht, Sport and Media were received by the Board:

Appropriate Assessment

- Evidence should be provided in the NIS to support the statement that the proposed development will not affect the key species and habitat of the Buckroney-Brittas Dunes and Fen SAC.
- Reference should be made to site specific conservation objectives for the site's individual qualifying interest habitats as opposed to unnamed key species and habitat. Conservation Objectives Supporting Document for Coastal Habitat should also be referenced.
- Department is concerned that HGVs may choose to use the unnamed road adjacent to Deputy's Pass Nature Reserve SAC – condition recommended.

EIAR

- Department is concerned that ecological surveying is insufficient to fully describe the biodiversity which has developed in the quarry.
- Development will result in the loss of lagoons as well as the flooded quarry void.
- Department considers that the presence of otter at the site cannot be ruled out. Availability of frogs may draw otters to marshes and ponds – further surveying and mitigation maybe required.

- Application site is likely to support an exceptional population size class for smooth newt and translocation is proposed – Department notes that no details of initial amphibian surveys, proposed capture translocation methodology, suitability of receptor ponds, habitat capacity of receptor ponds or follow up monitoring are given. Further information advised.
- Replacement ponds should be in place prior to the destruction of the lagoons and should be of similar area to demonstrate like for like compensation.
- Information given does not provide sufficient evidence that peregrine falcon are not breeding at the site. NPWS have a history of monitoring breeding peregrine falcon within the site.
- Breeding bird survey should include main development area and area impacted by proposed road widening – Department aware that common kestrel breeding on the site.
- Condition should be attached to any permission stating that the clearance of vegetation should only be carried out outside of the main bird breeding season.
- Bat survey should be carried out within the proposed development site and the L1157.
- Greater broomrape and green-flowered helleborine have been recorded in the vicinity and a rare and protected plant survey should therefore be carried out.
- Movement of large quantities of material may risk importation of invasive species – invasive species management plan should be provided at planning stage and in accordance with TII Guidance.
- Townland boundary along the L1157 is likely to be a feature of high ecological, historical or landscape significance – land within this zone should be subject to habitat, bat, mammal (particularly badger) and breeding bird surveys.
- Department recommends that a plan to manage the site as grassland/ scrub habitat is reconsidered and instead the land should be managed as Sessile Oak woodland and wetlands.

7.1.2. The following comments on the application were received from the **Health Services Executive (HSE)** on the environmental health impacts of the proposed development and the adequacy of the EIAR:

- All commitments to future actions, including mitigation and further testing, have been taken as read and all data has been accepted as accurate.
- HSE welcomes clarifications provided in Consultation Report accompanying EIAR in respect to matters raised in the Scoping Report.
- HSE is satisfied that public consultation has been undertaken and is on-going in respect of the proposed development.
- Non-technical summary provides a clear summary of the EIA process, the proposed development and its potential significant impacts on human health.
- EIAR acknowledges the potential to create dust and noise and contains mitigation measures to minimise significant impacts on the local population.
- EHS recommends that no onsite well is used for the supply of potable water.
- EHS recommends that further investigations are undertaken into the exceedances recorded as a result of groundwater monitoring in 2019 and that on-going monitoring of water quality is undertaken during the lifetime of the proposed development.
- EHS emphasises the importance of regular monitoring of treated water for arsenic prior to discharge to the Potters River.
- EHS is satisfied that detailed mitigation measures, if implemented in full, are sufficient to prevent likely significant impacts on public health.
- Noise from stone construction waste being tipped from trucks does not appear to have been assessed in any significant detail.
- Recommends that noise monitoring should be undertaken at nearest occupied dwelling and other noise sensitive locations; that corrective action should be included in the Environmental Management Plan if exceedances of permitted limits are recorded; the frequency of noise monitoring results should be submitted; and the height that material is drops from trucks should be minimised.

- Concerned that the average dust deposition levels for the period 3/10/2019 to 4/11/2019 are at the higher end of the standard range. Dust mitigation measures should be included as condition of planning and implemented in full.
- Inadvertent acceptance of contaminated waste has the potential to negatively impact on ground and surface water quality and public health – mitigation measures should be conditioned and implemented in full.
- Recommended previously that consideration should be given to the use of the restored site to provide for an opportunity for health gain. Satisfied that the site may not be suitable for long term community and/ or amenity use.

7.1.3. **Transport Infrastructure Ireland (TII)** has no observations to make in relation to the proposed development subject to implementation of traffic management measures.

7.1.4. **Irish Water** submitted the following observations on the proposed strategic infrastructure development:

- Proposals to bring inert materials into the quarry pit carries serious risk in respect of ground water and surface water contamination and other means of contaminations along hydrological pathways.
- In practice it is impossible to ensure that no contaminated material finds its way into the landfill area – backfilling results in problems associated with contamination by fines, hard wall plaster products and other contaminants that end up with the inert materials as well as oil and diesel spillages.
- Irish Water applies a precautionary approach to proposal of this nature and/ or proposals that may impact on physical assets and drinking water sources.
- Chapter 7 of the EIAR outlines that there are potentially adverse impacts to groundwater receptors at the site which consist of good quality, poorly productive diorite bedrock aquifer and nearby domestic and agricultural local groundwater supply wells and surface water receptors (Potters River).
- Further details are required in relation to the following:
    - Existing flooded site contains elevated levels of arsenic – concentrations in watered void compared to boreholes on site would suggest the altering of topography within the site has altered the leachability of arsenic.

- Proposed backfill has the potential to alter existing groundwater flows, levels and quality – a significant inflow was detailed at BH2 and it is not established that the proposed development will not alter groundwater flow in the area with potential impact on local domestic and agricultural wells.
- Soil washing and C&D operations may alter pH which could affect the mobility of metals in the effluent.
- Details on the effectiveness of arsenic treatment during dewatering phase – additional inflows likely to occur during dewatering as the water table is lowered. Dewatering of base of flooded area could remobilise sediment which would affect treatment effectiveness.
- Details of effectiveness of arsenic treatment during the operational phase – elevated arsenic in discharge could impact on the Potters stream.

7.1.5. The Board requested comments from the **EPA** on the planning application and EIAR. In response, it is stated that all matters to do with emissions to the environment from activities proposed, the licence application documentation and EIAR will be considered and assessed by the EPA should a licence application be received. It is also noted that should the EPA grant a licence, it will incorporate conditions that will ensure that appropriate National and EU standards are applied, and that Best Available Techniques will be used in the carrying on of activities.

7.2. Third Party Observations

7.2.1. A total of 17 no. submission were received from the following third parties:

- Michael Higgins
- Christopher Langheld
- Ballinclare Alliance Co. Ltd.
- Keith Hutchinson
- Cllr. Pier Leonard and Cllr. Mary Kavanagh
- Danny Haskins and Jessica Moss
- Amanda O'Sullivan and others

- Christian Osthoff and others
- Pat King
- Terry Hughes
- Mike Carswell
- Richard Woodroofe
- James Hill
- Colclough Byrne
- The Resident, the Brambles
- Jayne Dwyer
- Michael Dwyer

7.2.2. The main points raised in these submissions can be summarised as follows:

Michael Higgins, Oatlands, Ballindarrig

- Serious risk of pollution of Potters River which runs through Observer's farm and is therefore a health risk to cattle and thoroughbred horses.
- Serious threat of contamination of domestic water from bore wells as there is no public water supply in the area.
- No notice or consultation.
- Risks of flooding, pollution and irreversible damage to fauna and wildlife on the river.

Christopher Langheld, Wild Strawberries, Ballinclare

- Surrounding road infrastructure is incapable of sustaining the levels of traffic generated by the existing development, which would be exacerbated if extended in duration and intensity.
- Application proposes to route all HGV traffic along the L1157 local road – applicant has insufficient legal interest to undertake improvement works to this road and proposal is not justifiable in terms of Environmental Impact Assessment.

- Statutory notices fail to reference works along the L1157 and the EIAR does not assess the effects of road widening on the L1157 from the Tap junction on the R772 past Observer's property to the facility.

Ballinclare Alliance Co. Ltd.

- Eastern-Midlands Region Waste Management Plan, 2015-2021 Policy E13 states that *"future authorisations by local authorities, the EPA and An Bord Pleanála must take account of the scale and availability of existing backfilling capacity"*. There is a notable lack of empirical information about the volumes of inert waste and C&D waste currently being generated in the region and the capacity for same. This will possibly be the largest facility of its type in the country.
- Application should be accompanied by an independent assessment of all inert landfills within the Region and a detailed capacity assessment of same along with an analysis of the amount of inert waste and C&D waste being generated in the Dublin region.
- There is no policy within the Wicklow County Development Plan, 2016-2022 for a facility of this nature at this location. Proposal is not plan-led and represents a piecemeal, ad hoc type development.
- Proposal will generate approximately 30 HGV movements per hour to and from the development – it would be more logical from a sustainability perspective to locate the facility closer to Dublin where it would not involve long road trips by diesel fuelled HGVs on a daily basis for 17 years. Proposal would be contrary to NPF aims to transition to a low carbon and climate resilient society.
- It is a policy of the Wicklow County Development Plan (CCE22) *"through coordinated land-use and transport planning, to reduce the demand for vehicular travel and journey lengths."* Proposed development, by reason of the excessive length of HGV journeys from source material to proposed development is unsustainable and contrary to proper planning and sustainable development.
- Appendix 1 of the Development Plan sets out evaluation criteria for reclamation and restoration of quarries and includes *"the suitability of the road network in the area to accommodate the traffic flows of heavy vehicles that may be generated."*

Appendix 1 also states with respect to facilities for the disposal of inert materials that a development shall not be permitted if it has a detrimental impact on the amenity of adjoining residents by reason of unacceptable levels of traffic, noise, dust, lighting or other impact resulting from the operation of the facility.

- Traffic report appended to the submission by Ballinclare Alliance Co. Ltd. concludes that:
    - There does not appear to be a letter of consent from the Local Authority for upgrade works along the L1157.
    - No base year traffic modelling, capacity assessments, traffic modelling of adjacent road links and junctions and independent road safety assessment.
    - Deficient sight line to north-west within southern intersection of R772 and L1157. Restricted sight lines within minor junction arm to view northbound HGVs turning into L1157 from R772.
    - Applicant identifies a plethora of off-site road improvements along the L1157 but fails to identify any difficulties in terms of road capacity or road safety.
    - A change of use planning permission at the Tap café could generate significant trips, which would require more detailed analysis of the R772/ L1157 junction.
    - Road upgrade not required if applicant reverts to the permitted one-way haul route via the L1113.
- Wrong haul route shown on EIAR noise chapter – no direct junction off M11 at location shown. There are a large number of dwellings along the correct route.
- There is no reference to the Tap Café in the noise chapter of the EIAR. Café has outdoor area that will be affected by passing HGVs. Dwelling opposite Tap Café and noise from passing HGVs are likely to adversely impact on its amenity.
- Proposal involving 30 HGV movements per hour will directly conflict with tourist traffic – National Botanic Gardens at Kilmacurragh are accessed off the L1113 to the west of the site.
- Silvan character and setting of the L1157 will be destroyed by frequent HGV traffic and works to edges.

- If Board is minded to grant permission, it is recommended that condition is attached requiring the applicant to solely use the original haul route associated with the permitted quarry via the L1157.
- Ecological report appended to the submission by Ballinclare Alliance Co. Ltd. concludes that:
    - Proposed development will discharge surface water to Potters River, which flows into Buckroney – Brittas Dunes and Fen SAC approximately 11.5km downstream of the quarry. AA Screening Report only identifies Zone of Influence of 5km.
    - Waste Permit (WPL 116) does not apply to the proposed development and relates to quarrying activity which ceased due to the presence of naturally occurring asbestos. Impact of proposed discharge has not been properly assessed on the Potters River or habitats of the SAC downstream.
    - Constructed wetland will replace settlement lagoons as project progresses to treat surface water for organic and inorganic contaminants. Proposed treatment of surface water has not been adequately addressed in Appropriate Assessment Screening Report – organic and inorganic contaminants have not been identified consequently and impacts have not been identified.
    - Constructed wetland has to cater for dewatering of quarry, surface water generated, the C&D facility and soil washing – heavy metals could enter constructed wetland and sediment and organic matter may require long term specialised disposal due to high levels of heavy metal retention.
    - No information to identify what impacts are direct, indirect or cumulative on Potters River and no information has been provided on the quality of surface water that will be discharged, proposed treatment of surface water prior to discharge, impact on Potters River flow rates, and the impact of Potters River on the SAC downstream.
    - No mitigation measures to deal with impact of discharging surface water into Potters River and the SAC downstream

- Water collected in the quarry void has elevated levels of dissolved arsenic, mercury and phosphate when compared to Potters River – concentrations and proposed methods for dealing with heavy metals and phosphates have not been provided.
- NIS does not identify if the proposed development will impact on fen or alternatively which of the protected habitats of the SAC that the proposed development will either directly, indirectly or cumulatively impact on the SAC.
- No detail of CEMP in NIS or how it will be implemented.
- States that additional treatments can be added to the constructed wetland to improve treatment of wastewater – no information provided on the elements of the surface water than may need to be treated.
- It is unclear what the function of the constructed wetland or lagoon following infilling will be and no assessment of management of surface water run-off on the SAC.
- Proximity of SAC and the impact of the volume of traffic on the SAC has not been assessed. Trucks accessing the site may need to pass through other European Sites.
- Consultation undertaken with IFI in 2005 for previous planning application on site identified Potters River as a salmonid spawning river for salmon and trout. Impact of change of flow and composition of water discharging to the river should have been assessed.
- Cake from water treatment system will be disposed to adjoining infill area – impact on surface water has not been assessed.
- No reference to wastewater treatment from the welfare facilities on site and no reference to potable water.
- Impermeable clay layer will be created at the base of the quarry – surface water could percolate through soil layers and there is no solution post infill from preventing the infill from being saturated. Increased levels of water through soil layers will lead to reduction in vegetation growth, possible loss

of soil strength and stability and potentially soil erosion, which will negatively impact on the SAC.

- The following comments are added to the Ecological Report from Peter Sweetman & Associates:
    - Board must assess the planning merits of the application in accordance with the Planning and Development Act, 2000 (as amended).
    - Board is required to form and record a view as to the environmental impacts of the development, considering the EIAR, views of the public and its own expertise.
    - Board shall "so far as concerns the assessment carried out under Article 6(3) of the Habitats Directive, it should be pointed out that it cannot have lacunae and must contain complete, concise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the protected site concerned."
    - In response to the suggestion that the Board may carry out screening to avoid the need for Appropriate Assessment, reference is made to AG Sharpston in the opinion to 259/11 Sweetman & Other v An Bord Pleanála and implemented into Irish law by Findlay Geoghegan J. in Kelly v An Bord Pleanála [2014] IEHC 400 (25 July 2014).
    - On the basis of the total lack of certainty in the information submitted, it is not possible for the Board to make a decision to grant permission that would comply with the above.

Keith Hutchinson, Tanglewood, Ballard Lower

Traffic:

- Much of the applicant's current planning application relies on the previous application granted in February 2016 (14/2118).
- Current proposal is completely counter to stated intentions of Reg. Ref: 14/2118 to leave extraction void to naturally fill with water, quarry benches to recolonise and settlement lagoons to naturally develop.

- Average total truck movements of 51 per day granted under Reg. Ref: 14/2118 is significantly less than the 150 per day now sought (Kilsaran granted permission in February 2016 to increase their daily HGV loads to 150 trucks per day and two months later the quarry was closed).
- Proposed change to haulage route would concentrate an excessive number of HGVs travelling in opposing directions into a small area. There is an alternative, more suitable and previously successfully operated one-way route already in existence.
- L1157 (Breagura Road) has neither centre line or edge line markings and the L1113 (Coolbeg Road) does have centre line markings.
- Haul route proposed and in particular the Ballinameesda Bends were a notorious blackspot prior to the opening of the M11 in 2015 – encouraging high levels of HGVs will be a serious traffic safety risk. Proposal equates to 140 trucks travelling north and 140 travelling south every day along this stretch.
- Proposal of having 300 HGV movements a day on a 2km stretch of road from quarry to the Tap Café is highly inappropriate and is in contravention of Policy TR33: *"Rural roads shall be protected from inappropriate development and road capacity shall be reserved for necessary rural development."*
- Transport of plant or machinery previously used on site could pose a health risk to residents on the haul route as a result of residual asbestos fibres being dispersed.
- Haul route structural analysis survey (June 2015) – chainage markings bear no relation to new chainage marking indicated on proposed road improvements for the L1157. Full new survey should be conducted for proposed 2-way route.
- Quarries and Ancillary Activities Guidelines states that *"heavy traffic should not be permitted on unsuitable roads and/or other specified roads, unless suitable upgrading or other improvements agreed with the planning authority are carried out."*
- At least four of the areas selected for passing bays have trees within the demarcated areas – applicant states that no trees will be affected.

NIS

- Current planning permission was granted for operational dewatering and did not envisage such a large scale dewatering in such a short space of time – releasing this volume of water into Potters River would be potentially very damaging to the river habitat and ecology. Any waters released should be done at a lower, slow and steady pace.

Population and human health

- Overall effect of traffic, noise and dust on local residents is misrepresented.
- Full and proper studies should be carried out, not only in relation to the application site but also the proposed haulage route.

Hydrology & hydrogeology

- Surface water quality monitoring at Potters River was last measured in 2015 before the closure of Ballinclare Quarry in 2016 – water quality has improved since and full study of water quality and aquatic life of Potters River should be commissioned.
- Volume of water in quarry is estimated to be 270,000 m^3 and Observer estimates it to be 872,000 m^3 – this could have serious ramifications for Potters River.
- Levels of arsenic found in the water are so high that the process of remedying the situation safely has already passed the point of no return. Volume and contamination of water has built up since management of water ceased in 2016.
- Siltbuster's original estimate of 60 to 70 days to empty the quarry should now be recalculated to 816 to 952 days – this is an excessive time to be continually pumping water into Potters River, damaging its aquatic life and ecosystem. Objects to applicant being granted permission to dewater the site at a rate any faster than 72m^3/hr.
- Hydrochloric or sulphuric acid could be used to speed up the dewatering process - volume of either of these acids required to clear the volume of water in the void, and the prolonged period of their use would pose a serious threat of further contamination of Potters River or increase risk of hazardous spill. Objects to applicant using any form of chemicals in water treatment.

Air Quality

- Weather conditions at Baldonnel bear no relationship to the weather in the area surrounding the quarry and haul route – local wind speed and direction and local rainfall data are not reliable.
- Identifying residential/ sensitive receptors within 1km of the quarry site is insufficient – air quality assessment needs to be extended to include full length of haul route and 200m either side.
- Using the Design Manual for Roads & Bridges criteria is not appropriate in deciding whether an assessment of potential impact from traffic emissions is required.
- It should be a condition of any grant of permission that all trucks travelling to and from the site should be covered at all times.
- Monitoring and inspection of access road and haul routes should be defined as being weekly, with findings published online.

Noise

- 300 truck movements a day, in close proximity to observer's home, is in direct conflict with the National Planning Framework commitment to protect quiet areas.
- Noise assessment omits residences on the proposed haulage route that will be adversely affected by noise levels from HGVs and properties selected for predictive modelling will not be the worst affected by traffic noise.

Local knowledge

- Locals have enjoyed 6 years of significantly reduced road traffic and local roads have become an important amenity area. Proposal would result in the removal of the public's safe right of way along these roads.
- L1157 is particularly perilous in wintertime or times of icy conditions.
- Proposed volume of traffic poses serious road safety risk to residents of Tanglewood as they use the driveway access – trucks can appear very quickly around the slow blind bend.

- New road surface along the L1157 will attract illegal and impromptu car racing.
- Regular flooding occurs on Potters River – contaminants released from quarry waters could have detrimental effects on the local community and business.
- Private water wells – local water table works in an unusual pattern and release of contaminants or leachate could have a devastating effect on drinking water.
- Vehicles accessing the site should have tracking devices with pre-set speed limits.

Additional observations

- Hours of operation should be curtailed to reduce the prolonged daily intrusion of the operation on local residents along haulage route (09:00 to 17:00 hours Monday to Friday only).
- Fluorescent dust dispersal test should be conducted along haulage route.
- Any liner for the proposed quarry should maintain the integrity of the site and completely protect the surrounding environment from run-off of any leachate.
- Scale of operation is so large that it cannot properly be guaranteed that every truck of waste being delivered is suitable for non-hazardous inert waste landfill.
- There is potential for tailback of HGVs awaiting access to the site given the volume of trucks being proposed.
- Access to the site through Council yard would negate the need for HGV traffic on the narrower access along the L1157.
- Highest point of loads being carried on trucks should not exceed the height of the lowest point of the trailer wall within which the load is being carried.
- Importation of any noxious weeds or harmful micro-organisms in infected loads could have a devastating effect on local farming and flora and the gardens and arboretums at Kilmacurragh.
- Surety bond should be set up to be used in the event of any unforeseen events that causes damage or negative effect on the locality.

- Lowest point of the site will be the swale and not the wetland, and water from the swale will discharge, completely untreated, into a dyke and onto the Potters River.
- Height of the permitted landfill should be restricted to the current ground level height of c. 60m OD, (not up to the proposed 58-90m OD), and there should be a low gradient slope down to the wetland. Rock faces should be left exposed.

Cllr. Pier Leonard & Cllr. Mary Kavanagh

- Excessive nature and scale of the proposed development in a rural area.
- Negative impact on the environment, biodiversity and on watercourse.
- Noise pollution and negative impact on surrounding residents and their mental and physical health.
- Negative impact on surrounding tourism attractions, i.e. Kilmacurragh Gardens, Coillte, Avondale Tree Top Walk.
- Road safety.

Danny Haskins & Jessica Moss, Oatlands, Kilbride

- L1157 in greater use due to popularity of Kilmacurragh Gardens and walks at Deputy's Pass.
- There is large agricultural machinery using the L1157.
- Rather than traffic reducing on the L1113, movements have already been replaced by HGVs accessing Dempsey Sand & Gravel and another landfill that has opened in the meantime.
- Increased HGVs would make it more difficult to manage necessary animal movements on the L1157.

Amanda O'Sullivan & Others, Coolbeg Cottage, Coolbeg

- Habitat created by previous activity has been populated by wildlife that might otherwise not have thrived in the original landscape. There will be 20 years of daily disturbance and destruction of nests, dens and other habitat and food

sources. Peregrine falcon are breeding at the site and nest site will be destroyed with no cliff face remaining.

- Quarry absorbs rainwater in times of heavy rainfall and is more likely to drain to lower lying areas resulting in flooding if filled in.
- Size of trucks accessing the site should be restricted without requiring the widening of rural road.
- Applicant cannot control behaviour of drivers.
- Indication from Wicklow County Council that the L1113 should not be used is due to the already high volumes of HGV and commuter traffic. Haul route should be via the R752 Rathnew to Rathdrum Road and across Deputy's Pass and only this route should be used.

Christian Osthoff & Others, Sundial House, Carrigmore

- Observer's home is 330m from the quarry edge, his rental property is 220m from the quarry edge and he owns 120 acres of forestry and agricultural lands to the north. There are 3 full-time and 5 part-time jobs on observer's land.
- Observer opposes proposed development on grounds of sustainability, habitat loss and dis-improvement of a place to live.
- No consideration given to partially filling the quarry and restoring a shallow lake at the base of the cliff.
- Applicant is still obliged to clean up waste, concrete structures, sand and gravel heaps and buildings under current planning permission. Do nothing option indicates that the site is not even tidied up of its waste and structures.
- Quarry lake adds interest and dramatic changes in level to an otherwise sedate landscape.
- Observer employed an **ecologist** who concluded as follows:
    - Project descriptions fails to describe one of the main activities which is the dewatering of the quarry.
    - No reference is made to the known baseline habitat and botanical data available for the property from previous studies to inform habitat restoration

plan and ecologically suitable species for same – no cognisance of previous land use and field boundaries (small fields, hedgerow, stone walls and rocky outcrops) from OSi mapping. There should be a detailed and conservation based outcome.

- Destruction of breeding site for Peregrine Falcon (Annex I of the Bird Directive), is in contravention of National Planning Framework (NPO 60).
- Proposed development contains a number of significant ecological gaps and limited ecological restoration objectives, which lack the detail required for a successful outcome and implementation. The proposed development does not meet Development Plan objectives NH6, NH8 and NH12.
- Diversity of native flora includes both calcareous and acidic grassland and heathland species reflective of the soils and underlying geology. Proposal cannot be deemed ecological restoration.
- Search for protected, rare and notable floral species are inadequate and have failed to include consultation with NPWS (near threatened greater broomrape and species of orchid).
- Badgers have been recorded frequently in the environs of Ballinclare Quarry and large badger sett is located on the northern edge of the quarry and there is another on the Osthoff lands – these setts are not considered in the ecological study. Roadkill is high on local roads.
- No bat activity surveys have been completed as part of the application and the assessment does not offer any mitigation proposal for same. There is adjoining broadleaf woodland habitat at Carrigmore, potential roosting locations at the quarry and the large water body offering rich foraging grounds for bats. Sufficient information needs to be gathered to see if bat derogation licence is required.
- There are discrepancies between the habitat map presented in the EIAR and ground conditions – 2 mapped wetland habitats within the report are no longer extant.

- No detailed proposals for protection of amphibians from wetland works, and the safe and orderly destruction of the current breeding grounds and translocation proposals.
- No dedicated bird surveys were completed – surveys were habitat based. Detailed Peregrine falcon breeding survey should have been commissioned to determine nesting and consultation with NPWS would have confirmed this as a traditional nesting site.
- The deliberate destruction of, or damage to, a traditional nesting site of protected species for the purposes of commercial development would not meet the criteria for derogation under Article 9 – proposal will result in the loss of a traditional Peregrine falcon nesting site as cliff habitats will be destroyed.
- Clarity needed from NPWS on how quarry nesting populations of Peregrine falcon in Co. Wicklow contribute to the favourable conservation status of the species in the Wicklow Mountains SPA (site code: 004040). Importance of ancillary breeding sites outside the SPA to population dynamics and breeding success is unclear.
- Surveys presented in EIAR underrepresent the ornithological value and importance of Carrigmore/ Ballinclare lands for other avifauna. Observer is experienced bird watcher and has recorded bird species at shared quarry boundary (includes 11 red listed species).
- Observer has surveyed invertebrates at Carrigmore over past 18 years – includes 21 species of butterfly and 430 species of moth, some of which are red listed and restricted to Co. Wicklow. Potential adverse impacts from dust.
- No survey conducted for common lizard.
- No detail of flora and fauna and aquatic ecology at the discharge location at the Potters River or surveys for brook lamprey.
- Annex I habitats 2170 – Dunes with Salix repens ssp. Argentea (Salicion arenariae) and 2190 Humid dune slacks are both listed as water dependent

habitats under Annex IV of the WFD – NIS states that all qualifying interests of the Buckroney-Brittas Dunes and Fen SAC pertain to terrestrial habitats.

- End use of Ballinclare Quarry needs to be one of true ecological restoration, informed by extant habitats within the quarry, habitats in adjoining lands and species they support. This should be one of the largest ecological restoration sites within the region and State.
- Integrated plan required with detailed proposals to ensure safeguarding of peregrine falcon and sand martin nesting sites, amphibian breeding ponds, scrub habitat for breeding birds and red listed plant species, creation of wetland habitat with integrated ecological design, restoration for breeding lapwing, creation of lowland hay meadows/ calcareous grasslands, heathland on shallow soils over rocky outcrops, long term monitoring and habitat management commitment, removal of all construction materials, and bond to ensure delivery of the plan.

- Asbestos found in quarry was deemed to be acceptably low to human health but was deemed bad enough to close the quarry.
- Observers suggest the route of water discharge from the by pipe to a point much further downstream near the M11/ Tap.
- C&D shed open on two sides will have little impact on dust and noise suppression.
- There is no dust/ air quality monitoring along the entire north-eastern side of the site even though this is where most of the dust will be blown by the prevailing wind. Forest on observer's land is being treated as a buffer zone rather than a receptor and is sensitive to dust.
- Dust study is out of date as horticulture business is not included as a sensitive receptor – polytunnels covered in dust will be ineffectual growing spaces and outdoor grown food will be covered in dust.
- There is no room along the boundary and there are two points where the cliff drops directly beside the boundary – fence cannot be erected of applicant's land.

- Quarry edge is 330m from observer's house and machinery will eventually be 30m above the level of the house as quarry fills – no noise calculations for increased working height. Quarry face could also act as an amplifier of sound.
- Baseline noise monitoring conducted between April and October 2019 when leaves are on trees. No baseline monitoring conducted to the north-east where sound is louder from prevailing winds.
- No apparent mention of reversing bleepers and its impact on surrounding receptors.
- All work within the site and deliveries to the site should only be allowed between 9am & 1pm and 2pm & 5pm Monday to Friday. Works were taking place outside permitted hours in February 2021.
- Security lighting should stop.
- The quarry is visible from Kilmacurragh and top of quarry is partially visible from M11 heading north.
- Original field boundaries should be reinstated.
- Native wildflower mix more appropriate than "suitable agricultural mix".
- Forest school on observer's land will not be able to operate.
- Entrance to landfill should have a slip road built such that only traffic to and from the Tap and R772 junction can enter and another slip in the other direction to the L113 would have a barrier/ gate so that only local traffic can enter and leave by pre-arrangement.
- Carbon emissions calculation of 0.0065% of Ireland's total appear to be very optimistic. Landfill will account for more than 90% of the total CO_2 emission within the local community of about 600 houses.

Pat King, Chairman, Ballynagran Energy Plus

- Unacceptable that residents along L1132, who already have a landfill in Ballynagran, will have the extra burden of another landfill within 2km.
- Observer believes that comparison of the carbon footprint of the Ballinclare landfill application to the entire country is incorrect by a large margin.

- Ballynagran Zero Carbon Ltd. carried out an assessment in 2012 around the area of Ballynagran landfill which concluded that there was 3,444,383kg CO_2 per annum consumed and 61% of homes were D1 energy rating or lower.

Terry Hughes, Hollybank, Carrigmore

- Resides at closest property to the site (north) and is concerned with the lack of engagement with the local community.
- Kilsaran carried out a similar project at Tullykane, Co. Meath circa 2016 where there was significant public engagement and the promised provision of 10 acres of land for public amenity on completion of the project. Local area should similarly receive some community gain.
- Observer's family home would be in the area most adversely affected by noise, especially from C&D operations.
- It may be a number of years before the facility would reach anywhere near the predicted capacity of 150 trucks per day. There is a closer facility to Dublin at Callery, Co. Wicklow. Proposed facility may be in operation a good deal longer than predicted.
- Need for additional waste management capacity for inert soil within the Eastern/ Midland waste region was identified prior to commencement of operation of inert landfill at Callery (Sugarloaf).
- There is a disproportionate proliferation of landfill sites/ dumps/ quarries in this area and there should be proper cumulative assessment.
- There should be an independent EIAR and not one carried out by the proposer.
- Reports rely on data from 2005 and 2014 rather than up-to-date data.
- Observer questions if crushing will take place on a regular basis and could these activities be restricted to weekdays. Shed used for crushing should be enclosed, soundproofed and air filtered.
- How can Kilsaran ensure that they would have the capacity to complete the project within the 17-year estimate?

- Project should be restricted to certain EWC waste codes. Topsoil will only be needed in the last couple of years. Storage of topsoil can create more air pollution.
- Proper testing of materials should be carried out from a wide enough sample of the source site.

Mike Carswell

- Operates small woodland management and wood craft business on property of Christian Osthoff to the north of the quarry.
- A stand of specifically managed sweet chestnut trees is located at the quarry edge directly in line with the prevailing wind – these provide a large proportion of observer's required materials to make a living.
- Applicant's suggestions for mitigation of dust on observer's property are impossible – these should be investigated on a site-specific basis.
- Inert material also includes insulation materials which could host chemically reactive substances.
- No specification of the type of fencing for securing the site.
- There are discrepancies in project maps/ plans including incorrectly labelled sizes of buildings and incorrectly marked boundaries for certain proposed activities.
- Kilsaran should compromise on the size of the landfill and the retention of some of the current ecologically important aspects of the site.

Richard Woodroofe, Raheenmore Stud

- Owns land located 5km downstream along Potters River which is subject to regular flooding in summer and winter and applicant does not identify this.
- Appears that there will be pollutants emanating from the inert waste and some leachates may discharge untreated into streams feeding into Potters River.
- Observer currently implementing environmental measures under the GLAS scheme particularly in the form of riparian margin 30m wide along the river and also 30 Ha sown down to wild bird cover.

James Hill, Dunganstown Castle

- Observer farms land on both sides of the L1157 where there are three access points from this road.
- Conscious of the inconvenience and dangers to residents and road users that an increase of up to 300 HGVs per day would have on a minor local road.
- 11 no. passing bays can only be provided with the consent of the landowner and no landowner has been consulted.

Colclough Byrne, Ballinclare House

- Farm adjoins the application site and extends to both sides of the L1157 and livestock is regularly moved on foot from one side of the road to the other.
- Water from Potters River is used as drinking water for livestock on the farm.
- Proposed development will have a massive effect on observer's farming business, livelihood, personal health and wellbeing.
- If any permission is given, it should be based on a strict daily upper limit of truck loads. Daily truck limits should include trucks that go to and from the quarry and not just those delivering waste.
- Observer has concerns regarding the safety of egressing vehicles from his property, with trucks potentially veering into the safety area created to the front of the property (farmyard gates are set back).
- Since the closure of the quarry in 2016, there has been a massive increase in the numbers of people walking, jogging and cycling along the L1157 – proposal would remove this amenity.
- Discharge from swale will be to a dyke that runs through the observer's land.
- Highest point of the quarry fill will be 85-90m and lowest point will be 60m – sloped finish will cause significant long-term problems with water run-off.
- Impossible to see how the vertical rockface can be properly and adequately lined.
- There may be a backlog of vehicles waiting to get into the site considering the volumes of trucks and unloading/ reloading requirements.

- If permission is granted, vehicles should be fitted with low noise level bleepers or some other reversing warning system. Noise will increase as quarry increases in height – infill should only be granted to 60m OD.
- Effective acoustic barrier should be constructed on the border with the applicant's site with advice from independent noise expert. This would also improve site security.
- Soil washing facility is proposed on the lower south-eastern side of the application site close to observer's property and home – this facility could be moved to take into consideration the rising floor levels, and this may increase its noise and visual impact.
- Introduction of noxious weeds could be detrimental to observer's livestock business – dormant seeds can rejuvenate on disturbed clay.
- It should be a condition of any planning permission that any road widening outside observer's property should take place on the opposite side of the road and a low kerb and bollard should be installed at the entrance; no trees or hedgerow along the L1157 should be removed and grass verges shall remain in place; no trucks should be allowed to park within 3km of the site; machinery should not start/ end prior to/ after permitted times; vehicles should be fitted with low noise level reverse warning devices; trucks should be kept moving forward; and no discharge to dyke at eastern side of L1157.

The Resident, The Brambles, Ballard Lower

- Resides along the Potters River c. 2.5km downstream of the proposed development at the junction of the R772 and L1157.
- Concerned at the potential for an extra 30 truck movement per hour at this junction and associated noise levels.
- Potters River regularly bursts its banks in time of heavy rainfall and during winter – any increase in water flow will increase the severity and frequency.

Jane Dwyer, The Millhouse, Ballinameesda Lower

- Resides at the only surviving mill on the Potters River and intends to maintain and preserve the building and open it to the public – this project will be impacted by excessive flow of HGVs close to the property.
- Old building's foundations and structure close to the road are at risk from vibrations of so many trucks passing.
- Potters River runs through entire length of observer's property – there are many habitats and species along the river and there is a grave pollution risk to the river and adjacent land from constant flooding.
- It will be dangerous egressing the observer's property on the R772 with 300 trucks passing.

Marron Environmental on behalf of Michael Dwyer, The Millhouse, Ballinameesda Lower

Waste acceptance

- Section 2.154 of the EIAR states that only large consignments of soil will be subject to basic characterisation testing – all consignments should be subject to testing.
- Review of waste license issued for IMS Inert Landfill Facility in north Co. Dublin states that *"a representative load from every excavation/ demolition/ waste removal/ dredging works is subjected to a comprehensive assessment which must satisfy Level 1 characterisation"* and also Level 2 testing of samples shall also take place – These measures should have been the minimum proposed by the applicant in terms of initial waste acceptance procedures.
- 4 no. staff is incredibly small to manage and run an operation of this scale with 800,000 tonnes of waste per year required to be processed. May lead to all manner of errors and breakdown in environmental controls.
- Applicant should enter into agreement with Wicklow County Council and the EPA to employ a member of their staff on a full-time basis to inspect loads and acceptance documentation.

Leachate quality

- Applicant's consultants have not assessed the likely quantity of leachate from the landfill in any detail, have not identified an accurate list of contaminants or parameters of concern and have grossly underestimated the concentrations of said parameters. Discussions in EIAR relating to leachate treatment systems design, potential impacts from leachate on groundwater or surface water and assimilative capacities of receiving waters have not been based on anything concrete.

Hydrogeology

- Hydrogeology section of EIAR is wholly inadequate for a project of this scale and nature. Only three groundwater monitoring boreholes in a straight line will be installed at the site and there are massive gaps in information necessary to properly describe the hydrogeological situation with any degree of confidence. North Dublin landfill which is similar in size has 14 boreholes.
- Groundwater could be moving the opposite direction to that depicted in the EIAR.
- All activities including vehicle/ site machinery refuelling should be carried out in fully roofed and bunded or ramped areas such that all leaks and spills can be collected and disposed off site in appropriate wastewater treatment plant.
- No information provided on existing hydrocarbon interceptor or soakaway relating to their design, capacity, integrity, impact assessment of discharge and whether they will be suitable for planned activities.
- Hydrocarbon odour in overburden at GW02 should be investigated further and remedied if necessary.

Leachate management during operation

- Leachate will be allowed to flow through the landfilled waste, across the surface of the basal clay liner, spill out onto the bare rock surface of the quarry floor and into the sump – under no circumstances should untreated leachate be allowed direct contact with bedrock surface, underlying aquifer and quarry sump deep within the aquifer.

- There are not enough boreholes to support the claim that the surrounding rock is of low permeability and that this is mitigation enough for allowing the use of the aquifer as a transport route for leachate. Borehole GW02 actually showed a high inflow rate and moderate to good groundwater productivity, and there are fault lines which can enhance flow paths.
- Any leachate generated should be kept fully contained and transported directly by sealed pipe to treatment facilities. Low clay bunds can be installed within each phase to contain leachate from escaping to the aquifer and a pumping chamber and pump can be installed inside the clay bund to deal with leachate accumulations and pump directly to treatment facilities.
- Percolation area for existing on-site office effluent treatment system should not have been sited over area of fill underlain by concrete slab – may be contributing to bacterial contamination of site boreholes.

Leachate management post landfill closure

- Anywhere between 70 and 200mm of rainfall could percolate through the landfill cap and into the waste pile to generate leachate – this does not include for the potentially extensive volume of water that will run down the hill and onto the landfill surface, significantly increasing landfill rates.
- Leachate breakout can be exacerbated by stratification of low permeability clay layers within the waste pile causing leachate to be perched and flowing laterally – could lead to dieback of grass and soil erosion.
- Landfill design should include for leachate collection by way of pumping chambers with pumps installed to the base of cells within each phase of landfill, and leachate should be pumped directly to treatment plant. In this arrangement, leachate will not build up in cells and overtop lined side walls.

Leachate treatment

- Inert leachate contains elevated or high levels of ammoniacal nitrogen, BOD, COD, TOC, sulphate, chloride, sodium, potassium, metals and hydrocarbons and these elements have not been considered in the treatment system design process. No information provided on the volumes of leachate, constituents/

contaminants required to be treated as well as their concentrations, and what treatment systems were considered.

- No detail provided on the treatment system other than its size – EIAR should provide detail on the objectives of the design, how each element is to be constructed, the nature, type and quantification of plants, how the system is to be developed and maintained and the build-up of metals, substrate and plant matter.
- Consultants considered that leachate would only be slightly contaminated and did not include the other contaminants (above) – process is flawed and has resulted in an irrelevant treatment system that is not fit for purpose.
- It is not possible to just add chemicals to an effluent or to initiate an aeration process for presently unknown *"chemical constituents* (that may) *change over time."* EIAR does not demonstrate with certainty what may be needed.
- Once oversight and maintenance of the wetland ceases, there will be virtually no treatment of effluent. There will be a need for long-term treatment of leachate post closure.

Hydrology

- No chemical analysis carried out upstream of the discharge point on Ballinclare Stream and no assessment of biological quality of the stream, no catchment studies and no assimilative capacity assessments.
- Monitoring stations on Potters River are totally unsuitable and not representative locations for assessment purposes. Baseline data for quality in selected receiving water is not accurate and assimilative capacity assessment are invalid.
- Catchment area and river flow rates are taken from a point 1.5km downstream of the confluence point and therefore provide a larger catchment, increased flow rates and assimilative capacities. Catchment study should have been carried out on Ballinclare Stream.
- EIAR reports different rainfall rates throughout the report – could result in significant differences in drainage from the site and flow rates in the river.

- May be that entire assimilative capacity study on Potters River is only pertinent to the quarry sump emptying operation and of no relevance to the discharge of treated leachate through the proposed wetland system – site specific impact assessment should be carried out.

Biodiversity

- Frogs and newts not recorded as resident in wet grassland or semi-natural ponds – is this a suitable habitat for them and will new ponds be needed?
- It may be prudent to prevent all wildlife, protected or otherwise, from coming in contact with the wetland due to the potential risks posed by the low quality environment.
- Current proposals will almost certainly result in severe contamination or streams, rivers and water quality at Buckroney Fen.
- Scale and nature of this SID warrants detailed 'site specific' ecological assessments of all relevant waterways taking into account the almost total lack of suitable treatment of leachate in current proposals.

Monitoring

- Monitoring inadequate in terms of the number of monitoring points and locations which are of no relevance – scale of proposal requires relatively intensive and relevant monitoring.
- Biological Q rating should be carried out on rivers and streams at least annually.
- Monitoring of discharge should be carried out and monitoring of leachate should be carried out prior to treatment.
- There are only 3 no. dust monitoring stations – there should be additional stations at site entrance, and north, south, east and west and north-east downwind of prevailing wind.
- Noise monitoring should be carried out at locations on each of the site boundaries and at a number of the nearest sensitive receptors.
- Monitoring of leachate, groundwater and surface water is generally accepted to last for decades post closure.

River Potter water levels/ flood events

- Clarification needed as to what methodology will be used to predict when the river is likely to overspill its banks in order that dewatering can be halted prior to flooding.
- There are no calculations in the EIAR relating to the changes in surface water flows to the local drainage network during or after filling is complete.
- EIAR should have provided calculations of the present day volumes of surface water flow from the site and the predicted flows from the site during landfilling and after landfilling is complete. This is to demonstrate that there will not be increased flows in the river due to the proposed activities or after closure of the landfill.

7.3. Applicant's Responses to Prescribed Bodies

7.3.1. The applicant submitted individual responses to each of the observations from prescribed bodies, which are summarised as follows.

Response to DAU

- There is a valid permission for the quarry development on site and proposed backfilling and restoration and C&D facilities are perceived as a logical progression for this permitted development.
- Habitats in the Buckroney-Brittas Dunes and Fen SAC were described in the NIS as being terrestrial as the section of the Potters River at this point is tidal and is therefore influenced by the sea and saline water.
- Conservation objectives supporting document notes that the high intensity negative impacts recorded at Brittas Bay and the SAC include recreational activities and trampling, invasive non-native species and erosion associated with human activities. Pollution of and hydrological changes to the Potter's River not considered to present risks to the dune and fen habitats of the SAC.
- Current discharge licence provides for the dewatering of the existing quarry void. In addition to the water treatment system required by the existing discharge

licence, applicant intends to provide a constructed wetland to further treat leachate.

- There will be no change to the characteristics and quantity of discharge to the Potters River over that which is currently permitted in accordance with the existing quarry permission (Ref. 14/2118) - proposed development will not affect the qualifying interests of Buckroney-Brittas Dunes & Fen SAC regardless if they are terrestrial or water-dependant habitats.
- The ecological evaluation and impact assessment approach is based on Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland ("CIEEM guidelines") (CIEEM, 2018) and is accepted as the standard for assessing biodiversity. Wicklow County Council does not raise or highlight any concerns regarding the ecological survey.
- No otter habitat features such as holts or couches noted during survey – wetland will be suitable habitat for prey species for otter and will remain available as otter foraging areas.
- During phased construction of new wetlands, some of the current lagoons will be maintained and amphibians will be able to move freely between new wetland and old ponds without the need for active relocation.
- Peregrine falcon nesting site located on the highest point of the quarry face, and it may be many years before the quarry backfilling / landfilling reaches close to this point. Peregrines are very adaptable.
- Additional breeding surveys can be conducted or conditioned if required by NPWS and consideration could also be given to amending the upper landfill level so as not to landfill to the top of the quarry. Any backfilling against the nesting site will be done outside of the nesting season.
- All road improvements along the L1157 will be restricted to within the existing road curtilage and verges, and no clearance of vegetation will be required - there will be no impact on breeding birds, bats or badgers.
- Close examination of quarry walls revealed no sign of bat roosts or suitable crevices to house significant populations of bats.

- Prior to excavation works for the proposed wetland facility, a season survey will be conducted for greater broomrape and green-flowered hellborine - if identified, they can be left undisturbed or translocated to other suitable areas.
- Risk of invasive plant species being imported to the application site is low and any waste licence issued by the EPA will include a requirement for an invasive species management plan.
- Applicant is open to consideration of planting restored lands with trees and allowing the site to return to a woodland habitat; however, imported soils may be poor / nutrient deficient and poorly drained, and establishment of trees could take a long time.

Response to HSE

- Proposed development will require a waste licence from the EPA, which will apply specific conditions and monitoring requirements in respect of the management and control of emissions to the environment.
- No drinking water will be sourced from wells within or around the application site.
- Surface water controls and monitoring will be undertaken in line with the conditions set out in the existing discharge licence for the quarry (Licence Ref. No. WPL-116), or any variation thereto imposed by any future EPA waste licence.
- Groundwater monitoring regime will remain in place for the life of the proposed landfilling and recovery operations and for a limited closure and aftercare period thereafter – expected that EPA waste licence will include conditions on the control of emissions to ground / groundwater and for monitoring of groundwater monitoring wells.
- Noise impact assessment in EIAR assumes a near worst-case scenario that noise is generated from five sources simultaneously and on a continuous basis during working hours. Unloading will be very short and not significant when averaged over 15 or 30 minute intervals.
- Additional noise monitoring should be applied by way of a waste licence issued by the EPA rather than by way of planning permission.

- There is already an undertaking to minimise drop heights of imported materials from HGVs vehicles.
- Baseline dust deposition results in the EIAR are based on the Bergerhoff Method VDI 4320 Part 2. Applicant will implement the control and monitoring measures in respect of dust emission and air quality identified in the EIAR but considers that any relevant conditions should be applied by way of a waste licence issued by the EPA.

Irish Water

- Board will accept that there is a need for soil / C&D waste management facilities and that there are unavoidable risks associated with such activities which must be fully managed and minimised.
- *Perceived risk* - All soils imported for backfilling must be pre-tested and screened against inert waste intake criteria prior to any approval being issued for acceptance at the facility.
- Guidance on Groundwater Protection Responses for Landfills published by the GSI indicates that the hydrogeological setting at the application site is generally suitable for landfill development.
- Predominant waste stream will be soil generated by sub-surface excavations on construction projects. Soil intake will be predominantly clayey in nature and will have an inherently low permeability.
- Sandy/ gravelly soils are likely to be diverted to the soil washing plant for recovery as recycled aggregate and C&D waste will likewise be directed to the C&D recovery area - This will reduce the volume of potentially permeable material within the landfill that may conduct water flows through the inert landfill or release contaminants when exposed to water as it seeps through the waste body.
- Most of the material disposed of at the facility will be clayey soils and any granular materials will effectively be encapsulated by indiscrete pockets of low permeability soils within the landfill. Rainfall is more likely to run off than infiltrate through the waste to generate a weak leachate.

- Proposed water treatment system is robust and has considered potential worst-case contaminant concentrations in any leachate generated by rainfall / run-off over (or flow through) the inert waste body.
- *Receptors* - Proposed waste facility is located above a poor aquifer and is not linked or connected to any downstream public water sources. Inert waste materials will be placed above or behind a clay liner which will afford protection to surrounding groundwater resources while any off-site discharge will be treated by the proposed site-based treatment system.
- Recognised that levels of arsenic and iron in the groundwater around the quarry are naturally elevated above levels permitted by the Drinking Water Regulations - dewatered groundwater within the quarry to be treated prior to any off-site discharge to the Potter's River.
- Need for inert landfill facilities arises from more onerous intake conditions and the anticipated diversion of waste streams away from unlined recovery facilities to lined inert landfill facilities in the future.
- *Difference in arsenic levels* - Assume that the attenuation of arsenic in the quarry occurred when the pH was lower, likely due to direct rainfall (which is slightly acidic). As the pH increased in the sump, the adsorbed arsenic is released leading to increased concentration of naturally occurring arsenic in the quarry sump.
- Following the completion of the proposed backfilling, dewatering will cease and the groundwater levels within the poorly productive bedrock aquifer will rise and return to a natural (equilibrium) level across the site.
- *Alteration to Groundwater Flow* - There was only ever a negligible groundwater flow into the quarry void, and it is considered that the near surface cavity recorded at GW2 is localised, and not laterally continuous or persistent.
- Proposed inert landfill and C&D waste recovery activities will not have a significant impact on groundwater supplies to local domestic and agricultural wells in the surrounding area and any impact on groundwater levels beyond the localised quarry footprint is likely to be negligible.

- *Implications of Potential Alterations to pH during Soil Washing/ C&D Operations* - The pH of the discharge water will be tested on a regular basis and if levels are being altered as a result of any activities on site, then measures will be taken to correct this by dosing immediately before the wetland treatment system.
- Soil washing plant is an entirely closed system in which wash water is treated and recycled within the unit and sludge cake removed – no requirement to remove or discharge any wastewater from the plant.
- *Effectiveness of Treatment during the Dewatering and Operational Phase* - Siltbuster treatment system will treat naturally elevated levels of arsenic in the water collecting in the quarry void and remove suspended solids. Treatment system will remain in service for duration of dewatering and also for the subsequent C&D landfilling / waste recovery operations (at which time it will be supplemented by the proposed wetland treatment system).
- EIAR is not a detailed design or technical specification document and construction details for wetland treatment system will be agreed prior to its construction with the EPA in accordance with the provisions of any waste licence. EPA has the discretion to direct an alternative means of leachate disposal from the site.
- Wetland processes will be required in the following process train: anaerobic wetland (mainly for precipitation of metals and sulphate precipitation) otherwise called a biochemical reactor (BCR) followed by an iron sequestering unit (ISU) to assist with sulphate removal followed by an aerobic polishing wetland (APW) for removal of barium, chromium and organic substances.
- It will be possible to tanker leachate from the site and wetlands can be actively aerated to increase treatment efficiency by installation of a blower and diffuser system. Anaerobic wetland elements can also be enhanced by dosing of small amounts of methanol to the influent as can the performance of iron sequestering unit by the addition of iron.

7.4. **Applicant's Responses to Third Party Observations:**

Response to Michael Higgins

- Many of the issues identified by observers have been addressed in the EIAR.
- *Risk of pollution of Potters River* – significance of impact without mitigation was considered to be moderate and with mitigation in place the residual impact on water quality during construction was considered to be not significant.
- Potential impact during operation from contaminants in rogue loads, accidental leakage of fuels and suspended solids in off-site discharges – residual impact considered to be not significant with mitigation measures in place.
- *Risk of Contamination of Domestic Borehole Supplies* – Aquifer is classified as poor and soils and stone will only be accepted from sites where prior land-use / history is known and soil testing results have been provided in advance. Mitigation also includes the installation of a low permeability clay layer at the base of the proposed inert landfill.
- *Risk of Flooding, Pollution and Damage to Ecology in Potters River* - no sensitive flood receptors along the Potters River immediately downstream of the quarry other than agricultural land and significance of any related flood impact is rated as slight.

Response to Christopher Langheld

- *Traffic/ road infrastructure* – Reg. Ref: 14/2118 is relevant and material to the current planning application. Proposed intake loads of 150 per day matches the permitted limit of 150 exports loads.
- Change in haul route to only use L1157 has been facilitated by the completion of the section of M11 motorway between Arklow and Rathnew in 2015 and the subsequent reduction in traffic levels along the R772 Regional Road.
- Wicklow County Council Chief Executive's Report requests the Board to consider conditions requiring that the details of proposed road improvements as outlined in the drawings and documents submitted with the planning are to be agreed with Wicklow County Council and that such works be carried out at the Applicant's expense.

- Road improvement works will be undertaken by or on behalf of Wicklow County Council and reference is made to Section 13 of the Roads Act of 1993.

Response to Ballinclare Alliance Co. Ltd.

- Submission focuses heavily on the perceived impact on the Tap Café / Restaurant – planning application for retail/ leisure/ lifestyle destination development at this site was recently refused (Reg. Ref: 20/982).
- *Need for the proposed development* – Changes to EPA regulations result in the proportion of soil and stone waste previously accepted at unlined soil recovery facilities being diverted to inert lined landfill facilities.
- Inactive quarry is preferable to a greenfield site for the proposed development as it is within an industrial footprint and has generated comparable emissions and environmental impact.
- There are few other inactive quarry sites in the Greater Dublin Area and proposal is sufficient size and scale to justify significant upfront investment.
- Recovery of C&D waste is a clearly stated objective of 'A Waste Action Plan for a Circular Economy'.
- *Material assets* – Proposed 2-way routing along the L1157 will see a reduction in HGVs travelling towards the application site from the Junction 18 on the M11 along the L1113 – this is also likely to be the principal access route for visitors travelling to the National Botanic Gardens.
- *Noise* – Amended haul route diagram included in applicant's response and further predictive noise assessment of HGVs carried out. Difference between cumulative ambient noise level, including HGV noise, and existing baseline ambient noise level indicates an insignificant increase.
- *Traffic* – Junction of R772 and L1157 was upgraded and improved prior to opening of the M11 when there were considerably larger volumes of traffic along this road.
- Current quarry permission expires in 2041 and maximum number of loads are limited to 150 per day – HGVs can access the quarry from any direction, but

Kilsaran have employed an informal one-way system of access on a voluntary basis.

- Results of traffic modelling analysis at the junction of the R772 and L1157 show that the impact of development generated traffic in morning peak is negligible in terms of overall junction performance.
- Improved L1157 has significant capacity to accommodate the forecasted traffic and the impact upon capacity arising from development traffic will not be so significant as to be considered adverse.
- Data suggests that the local road network and the haul route in particular has a good safety record – no recorded collisions at the R772 / L1157 junction involving HGVs.
- Planning Authority indicated that a shorter haul route along the L1157 was preferred, subject not only to appropriate road strengthening, but also to road widening works appropriate to accommodate safe opposed passage of HGV traffic. Road strengthening works would have been required along the L1157 under Reg. Ref: 14/2118.
- Applicant does not propose to undertake development works in the public road and has no authority to do so without the issue of the appropriate licences. Works will be completed at applicant's expense.
- Proposed road works, involving road repair/ reconstruction and strengthening and localised widening, should not significantly alter the character of the existing road. No letter of consent is required and strengthening and widening are the categories of road improvement considered fundamental under the term 'maintenance' as defined in the Roads Act 1993.
- Council's Engineers determined that the benefits of the one-way system were not evident given changes observed in local traffic characteristics since the grant of quarry permission under Planning Ref. 14/2118 and the opening of the M11. Proposed 2-way routes along L1157 offers significant benefits to L1113 – distance to Junction 18 is notably longer.
- Disingenuous to suggest that 15 No. HGV trips per hour could have an adverse impact on capacity at the R772 junction which is lightly trafficked on all arms.

- There were no issues raised in relation to the capacity of the junction at R772 / L1157 within the recent planning application at the Tap Café which forecasted 136 trips, together with staff and service vehicle movements.
- Applicant has indicated a willingness and has no objection to continue operating an informal one-way haul route between M11 Junction 18 and the R772 via the L1113 and L1157 Local Roads.
- *Ecology* - NIS specifically considers and assesses the effects of the proposed development on the integrity of the Buckroney-Brittas Dunes and Fen SAC approximately 11.5 km downstream.
- Existing discharge licence remains in force until such time as it is superseded by a waste licence issued by the EPA. Existing discharge licence provides for the treatment and discharge of water collected in the existing quarry void to the Potters River, subject to defined contaminant discharge limits and maximum rates of discharge.
- Leachate at inert landfill facilities is essentially surface water run-off which has been in contact with the imported soil / C&D waste materials - inert soil and C&D wastes have heretofore been managed at recovery facilities operating under EPA waste licences and Local Authority waste facility permits.
- Following backfilling and restoration, the only off-site discharge to the treatment pond, will be surface water run-off, which has not been in contact with any backfilled materials.
- EPA will continue to have an oversight and enforcement role post-closure and will have the necessary powers to independently monitor environmental performance, direct environmental control activities and enforce environmental compliance until such time as the waste licence is surrendered.
- Existing discharge licence dictates the quality of the surface water to be discharged to the Potters River during dewatering - there will be no change to the permitted volume of discharge to Potters River or to the hydrological conditions flowing downstream to the fen habitat / SAC.
- Pollution of and hydrological changes to the Potter's River are not considered to present risks to the dune and fen habitats of the SAC.

- CEMP is typically prepared following grant of planning permission - post-approval submission of a CEMP is considered appropriate as it must address, and be fully informed by, both planning and environmental consents.
- NIS refers to the hydrological assessment in the EIAR, including details of Siltbuster system - there is already provision and requirement for the use of a Siltbuster system to treat off-site discharge within the existing discharge licence.
- There will be no off-site discharge of water from the proposed soil washing/ C&D recovery activities – process water is re-circulated within a closed loop system and top ups of plant will be provided from on-site surface water.

Response to Keith Hutchinson

- *Traffic* - the potential exists under the current permission for all traffic to travel in any direction to / from the application site. Current permitted development has the same potential to generate 2-way traffic along the L1157.
- Vehicle swept path assessments demonstrate that the proposed road strengthening and widening scheme is suitable to accommodate the safe opposed passage of HGVs.
- Proposed road strengthening and widening scheme does not impact upon third party properties nor does it impact upon existing trees save for the type of maintenance routinely required. Measurement of the exiting roadway does not include any part of private driveways.
- The existing junction of the R772 and L1157 has been designed by Wicklow County Council expressly to accommodate HGV traffic.
- Should it be required, there is ample linear queuing space for up to 10 no. HGVs - no records of queuing on the public road over the recent history of quarry operations.
- *Ecology* - Water from the quarry void will not be pumped directly into the Potters River - will be passed through a series of on-site settlement lagoons at controlled rates for sediment settlement, and through a dedicated water treatment plant (Siltbuster) to remove metals and sediment. The off-site discharge will not impact river temperature.

- Any improvement in the ecology of the river could be attributed to improved water quality upstream - proposal envisages that there will be no change to the permitted quality of off-site discharge.
- *Water* - With mitigation measures in place, residual impact on water quality during the construction dewatering phase was considered to be not significant. Potential impact from contaminants in rogue loads of imported soil / C&D materials or accidental leaking of fuels or other petroleum-based products was rated as high. Suspended solids in the discharge will not be significant with mitigation measures in place.
- Water levels in the quarry void vary over time due to seasonal changes and it is expected that the void would continue to rise gradually over time as the quarry has been dormant.
- Existing discharge licence controls the rate of discharge to Potters River and not the overall volume - discharge licence limit of 72m^3/hr (1,728m^3/day). EPA licence will set surface water emission levels for operational / post closure phases.
- Chemical dosing is a standard practice in wastewater and drinking water treatment. Activity will be subject to oversight and control by the EPA waste licence.
- The current discharge licence provides for arsenic treatment / removal prior to the off-site discharge of water collecting in the quarry void.
- Kilsaran will comply with all regulatory consents and the discharge rate will not exceed the permitted / licenced limit.
- Extreme worst-case scenario of 500m from site boundary for identifying sensitive dust receptors – no highly sensitive receptors within the 500m to 1km zone.
- In order for an area to be deemed a ‘Quiet Area’ according to the EPA publication Environmental Quality Objectives - Noise in Quiet Areas, they must be located at least 7.5km away from any motorway or dual carriageway.
- Results of logarithmically adding the calculated specific sound level of the proposed HGV movements, to the ambient noise level measured during the

quietest period show that the difference between cumulative ambient noise level and current baseline ambient noise level are insignificant.

- Concerns about invasive species being introduced can be addressed by an invasive species management plan agreed with the EPA.
- Environmental control, monitoring and reporting requirements will be evaluated and specified by the EPA in conditions attached to a waste licence.
- Requirements for financial provisioning for restoration and aftercare of the proposed waste facility will be agreed with the EPA under the terms of a waste licence.
- Alteration of the landfill height will not change the amount of incident rainfall across the application site which ultimately has to be managed as surface water run-off.
- Aquifer designation and low groundwater flow volumes mean that the site is more suitable for inert landfill than the other two currently licenced facilities in the State.

Response to Cllr. Pier Leoanard and Cllr. Mary Kavanagh

- Wicklow is one of the constituent counties in the Eastern and Midland Region, and it is appropriate that certain categories of infrastructure development at strategically located sites within the County should accommodate not just local area and County needs, but also those of the wider regional area.
- Siting and scale of the proposed waste facility should be viewed in a regional context, and not just solely in a local or community context.

Response to Danny Haskins and Jessica Moss

- Tree trimming is necessary to accommodate existing large agricultural machinery and HGV traffic - proposed widening and road strengthening works will also benefit larger vehicles already using the road.
- Volume of HGV traffic generated locally and in particular along the L1113 was a factor that influenced Roads Authority preference for two-way haul route along the L1157.

Response to Amanda O'Sullivan and others

- Kilsaran organised and undertook a pre-application consultation with local residents insofar as could be manged – consultation report submitted with planning application.
- Experts concluded that there is no airborne asbestos at the application site – no excavation or processing of rock from the quarry and no potential for airborne asbestos to be generated in the future. Soil liner and inert waste will be placed against exposed rock faces.
- Existing approved controls will be further augmented by a constructed wetland during the operation of the waste disposal / recovery phase to remove further contaminants which could potentially arise in inert (soil / C&D) waste.
- If it made sense previously to source and supply virgin aggregates from the quarry, there is no reason why it should not also make sense to produce and supply secondary / recycled aggregates from the same location.
- Non-compliant traffic movements to the site can be identified by the applicant, local authority or EPA audit or through formal complaints procedures under EPA licence. Driver sanctions can also be applied.
- Misgivings have been expressed about traffic passing the Deputy's Pass Nature Reserve Special Area of Conservation (SAC) and Glenealy village.

Response to Christian Osthoff and others

- *Alternative* – Assessment of alternatives establishes a need for the proposed development and then addresses where such a facility may be appropriately located or best designed/ operated.
- It is not intended to actively manage the future grassland cover and it is expected that over time it will evolve naturally to a scrub type habitat. Applicant recognises that the existing planning permission imposes restoration obligations.
- *Visual Impact* – Effects of reinstatement of lands to grassland/ scrub habitat will be permanent, minor and positive.

- *Do-nothing Scenario* – Kilsaran will comply with long-term restoration obligations associated with the existing quarry permission in the event of no planning permission or waste licence.
- *Biodiversity* – Further site survey conducted in October 2021 identified Peregrine roosting in an area likely to be a nesting site located on the highest point of the quarry face – it may be many years before quarry backfilling reaches this point and consideration could be given to amending the upper landfill limit.
- Any placement of backfilling materials against nesting site will be done outside of nesting season.
- Not possible to restore site to exactly what existed, e.g., rocky outcrop and hedgerow planting. Restored landform will be similar to that which existed.
- No protected, rare or notable species of flora were recorded by the ecology survey at or immediately adjacent the site. Any greater broomrape or green-flowered hellborine identified on site can be left undisturbed or translocated.
- No badger setts within quarry site. There will be no trucks travelling at night when badgers are most active.
- Assessments of quarry face and trees above quarry face determined that there was very limited roosting habitat. No clearance of vegetation will take place along local road.
- Some current lagoons will be maintained, and amphibians will be able to move freely between new wetland and old ponds. Licence will be submitted to NPWS for any translocation.
- Discharge point ditch does not maintain flow throughout the year and is not important for fish populations.
- Pollution of and hydrological changes to the Potter's River are not considered to present risks to the dune and fen habitats of the SAC.
- Peregrines will defend a nesting territory of 2-9 km (Radcliffe 19930) and will rarely hunt large prey beyond 6km - Wicklow Mountains SPA is located at a distance greater than 14km.

- *Water* - Applicant is confident that, based on conservative assumptions around the nature of future waste intake and the robust design of the leachate treatment system, off-site discharge will satisfy water quality standards set by the EPA in any waste licence.
- 1m thick clay liner is deemed to be of sufficiently low permeability to provide appropriate level of protection to surrounding poor aquifer and conforms with EU Landfill Directive and EPA Landfill Design Manual.
- *Air quality* – open sides of the C&D processing activities can be fitted with vinyl clear PVC curtains to reduce airborne emissions.
- Forestry is deemed to be a low sensitivity receptor to dust emissions – no monitoring along north-eastern property boundary.
- Baseline dust deposition monitoring levels at the application site are low and well below a level of 1000 mg/m2/day.
- Only minor sections of northern boundary are left unvegetated and fugitive dust will settle within or around a vegetated boundary. Applicant open to establishing dust monitoring along north-eastern boundary.
- *Noise* – Cumulative long term noise impact from all noise sources assessed to be minor or negligible.
- At observer's property, a reduction of -15 dB(A) was assumed for partial screening by quarry faces and vegetation.
- C&D waste crushing/ processing will be undertaken at roofed shed with wall cladding on northern side – this will attenuate noise at observer's property to a greater extent.
- Further noise assessment carried out along the L1157 show that the difference between the cumulative ambient noise level (with development traffic movements) and the current baseline ambient noise level are insignificant.
- Visual assessment concluded that the proposed development will not be visible to residential properties and road users to the north.
- Lighting will only be used during winter working hours – there will continue to be a need for security lighting.

- The existing quarry (and therefore the proposed development) are only visible from locations along the eastern boundary of Kilmacurragh Arboretum.
- Only existing vegetation which will be removed is that beneath the proposed development footprint and anything which has managed to become established on the quarry faces.
- *Miscellaneous* - final seeding of restored surfaces across the facility will be undertaken using a native grass mix.
- Non-compliant traffic movements to and from the proposed facility can be identified by independent audit.
- Not considered appropriate to implement design measures to control movements into the facility approaching from the L1113 as there will be a need to accommodate some occasional intake from sites within the local area (e.g. from Glenealy or Rathdrum).
- Given strategic nature of the proposed development, it is considered inappropriate that any carbon emissions should be referenced, benchmarked or attributed on a townland or community scale.
- Applicant has no difficulty with working hours being restricted on Sundays and Public Holidays. It is simply not practical to cease intake and all site-based activity for the traditional lunch-hour between 13.00 and 14.00

Response to Pat King

- Appropriate to have regard to existing quarry permission being live until 2036 – no planning impediment to actively recommencing the application site.
- Proposed haul routing will ensure that traffic flows to and from the application site and the existing municipal landfill facility at Ballynagran will be kept separate as they travel over the local road network.
- Absence of detail on comparator assessment of emissions in the local community, e.g., landfill gas management at the Ballynagran facility, HGV movements to and from that facility, the daily car journeys made by local residents etc.

Response to Terry Hughes

- Insofar as the Applicant is aware, Calary Quarry near Kilmacanogue, has had no waste intake yet, and when operational, its waste intake is limited to 300,000 tonnes per annum.
- Soil generated by construction and development activities consumes available waste recovery / disposal capacity and it is important to ensure that capacity which is used up is replenished in good time so as not to constrain activity in the economy.
- Proposed landfill lining system is in line with established design and legislative requirements and provides an effective and appropriate level of protection to groundwater aquifers.
- Soil / intake from brownfield sites simply refers to soil generated from sites with previous development history and should not automatically be conflated with a risk of contamination.
- Proposed development provides for C&D wastes to be crushed within a roofed structure with external wall cladding to mitigate the impact of potential noise and dust emissions.
- *Noise* – There will only be minor cumulative long-term noise impacts at observer's property - minor noise impact is non-intrusive and can be reduced further to negligible with implementation of mitigation measures.
- *Consultation document* – Applicant recognises the need to keep abreast not only of public policy developments in respect of the circular economy, but also of client product requirements and specifications. Kilsaran will adapt and look to address the demands of the evolving circular economy.

Response to Mike Carswell

- *Air quality* – applicant open to establishing a dust monitoring station along the north-eastern site boundary should it be considered appropriate.
- *Waste intake* – Inert wastes have relatively low-level contaminant concentrations (if any) and are essentially stable and non-reactive in a physical, chemical or biological sense.

- Application will provide the appropriate level of resourcing and staffing to ensure the proposed waste facility complies with conditions of planning and licencing consents.
- In addition to the landfill element, the proposed development also makes provision for the recovery of C&D wastes, and this is in line with stated public policy objectives around improving resource sustainability and supporting the development of the circular economy. Applicant is well placed to maximise future use of recycled materials.
- Makes sense to produce and supply secondary / recycled aggregates from the same location as quarry.

Response to Richard Woodroofe

- Existing approved controls will be further augmented by constructed wetland during the operation waste disposal / recovery phase to remove further contaminants which could potentially arise in inert (soil / C&D) waste.
- Applicant confident that off-site discharge will satisfy water quality standards set by the EPA in any waste licence.
- *Flooding* – CFRAM mapping indicates that observer's property lies in a flood plain, which would be extensively affected by a 1-in-100 year flood event - there will be no increase in the off-site discharge rate set by the current discharge licence and no increased risk of flooding at observer's property.

Response to James Hill

- As above.

Response to Colclough Byrne

- *Traffic (volume)* – 150 no. HGV trips per day is based on intake of 800,000 tonnes per annum and a lower value payload or 20t per vehicle. Where all loads to be imported by articulated vehicles, resultant daily HGV traffic would be 104 no. trips per day. Estimated that approximately 70% or more of HGVs could be articulated resulting in 115 no. HGV trips per day.

- *Access to farm* - Proposed works to L1157 do not encroach into observer's farm access and there are no proposals to alter the configuration of the eastern edge of the road on the approaches to the farm access.
- *Traffic queuing* - *s*hould it be required, there is ample linear queuing space for up to 10 HGVs along internal access avenue - no records of queuing on the public road over the history of the operation of the existing quarry facility.
- *Fugitive dust in roadside drains* - all trucks exiting the facility will pass through wheelwash, thereby preventing fugitive material being deposited along the local road network. Mobile road sweep will also be used as and when required.
- *Restoration/ post closure proposal* – proposed swale along southern boundary will settle out any sediment carried by overground flow and attenuate off-site flows. Discharge from swale off-site to existing drain along public road, which historically carried run-off from the corner of the application site.
- *Arsenic level in discharge post closure* – discharge post closure will not include any groundwater input which is the source of current arsenic levels in the quarry.
- *Air quality* – dust related impact at observer's property with mitigation measures in place was assessed in EIAR to be insignificant.
- *Traffic emissions* - combustion emissions (primarily oxides of nitrogen) from vehicle exhaust emissions associated with the transportation of materials does not have the potential to contribute to local air pollution.
- *Noise* – worst case scenario noise impact at observer's property was assessed in EIAR as negligible. Raising of landfill to full height will increase separation distance and existing permitted noise limit of 55dBA at property boundary will not be exceeded.
- Noise will be subject to ongoing monitoring by the Applicant and external audit / enforcement by the EPA during both construction and operational phases.
- *Traffic noise* – further detailed noise impact assessment carried out – difference between the cumulative ambient noise level (with development traffic movements) and the current baseline ambient noise level are insignificant.

- *Miscellaneous* - proposed activities differ from previous quarry activities in that waste management is a highly regulated and controlled activity and that all site-based emissions are subject to oversight, audit and enforcement by the EPA.
- Provision to accept waste intake on a limited number (10 No.) of Saturdays each year is vital to ensure it can have some operational flexibility to accommodate major projects and to offer alternative waste outlets to waste contractors who may be required to move waste on Saturday morning.
- Concerns about invasive species being introduced to the soil via imported soil waste can be addressed by an invasive species management plan agreed with the EPA.

Response to The Resident, the Brambles

- *Traffic* – proposed development traffic will only reinstate a small proportion of that which travelled along the former N11 / R772 over many decades.
- Reasonable that the HGV haul route to the application site should concentrate traffic flows along safer, higher capacity motorway and regional road networks to the maximum extent possible.
- *Flooding* - CFRAM mapping indicates that the Brambles lies within a flood plain which would be affected by a 1-in-100-year flood event – no increase in off-site discharge rate set by the current discharge licence and therefore no increased risk of flooding at the property.

Response to Jayne Dwyer

- *Traffic* – Observer's property accessed directly off R772 which experienced a marked reduction in traffic levels since opening of M11 in 2015. Proposed development will only reinstate a small proportion of that traffic and the applicant considers there are no grounds for concern regarding for the foundations of the former Mill House Building.

Response to Michael Dwyer

- Proposed development has been informed by applicant's knowledge and experience gained when working it as a quarry, coupled with experience of

environmental management and performance and regulatory oversight of existing licenced soil waste recovery facilities.

- Staff employed at the facility refers to site-based staff only - will be augmented and supported by Kilsaran in-house technical, managerial and environmental staff (based off-site) and by independent external consultants, as required.
- *Leachate quality* – Material Solutions facility in North Dublin is currently permitted to accept waste at contaminant concentration in excess of inert limits.
- Information available to applicant on the nature of C&D fines and a total of 18 potential contaminants were considered.
- Reasonably conservative view of likely leachate quality has been adopted for preliminary wetland design purposes, particularly as proposal only accepts inert wastes according to Council Directive 2003/33/EC.
- *Hydrogeology* – comparison with two other inert landfill facilities is not appropriate – these facilities are located in significantly different environmental settings where there is a higher risk to ground and to groundwater.
- Groundwater levels and flow directions had regard to previous investigations – references by observer to flow and direction were from a time when the quarry void was suppressed by dewatering.
- Judgement in respect of groundwater flow had regard to rivers flowing beyond the site at a lower level to Potters River to the north-east; Ballinclare Stream to the north-east not having flow throughout the year; and possible limited control from mapped geological fault running west.
- Proposed inert landfill below groundwater level should not be a barrier to its backfilling and restoration – several existing unlined soil waste recovery facilities are also located below the groundwater table.
- Directive recognises that risks associated with landfilling with inert wastes are significantly lower than those represented by non-hazardous and hazardous landfills. Engineering required for inert landfill is also significantly lower and there is no requirement for low permeability barrier as part of the capping system.

- Leachate generated by waste which complies with the strict criteria for inert waste as defined by the EPA / Council Decision 2003/33/EC is relatively benign. Soil intake will be predominantly clayey in nature and will therefore have an inherently low permeability. Granular soils are likely to be diverted to soil washing facility. Any rainfall falling on waste body is more likely to run-off than infiltrate.
- Concur with observer that construction of low clay bunds at the base of the (lined) active landfilling area / cell would effectively segregate this water / leachate from that collected in the quarry void and allow it to collect in a dedicated sump and be monitored, managed and pumped separately to the water treatment facilities.
- Disagree with observer's statement that rationale for basal clay liner at inert landfills as a mandatory requirement of the European Landfill Directive. EPA Design manuals is to ensure that leachate does not and will never have contactor potential to infiltrate into the underlying aquifer. Liner does not have to be impermeable.
- *Leachate management post closure* – Some degree of infiltration accepted due to the risk associated with the benign leachate generated by inert waste. However, clayey nature of soils imported to site will effectively form a low permeability barrier.
- Cut off ditch would be excavated on high ground to the north to divert water away from the landfill, to keep clean overground run-on water separate to water flowing-off the surface of the landfilled waste.
- Surface water management system will be developed in line with the phased backfilling of the landfill – provision made for additional settlement/ holding pond, separate from wetland treatment area.
- Leachate from inert waste is benign and would not result in die back of grass. Risk or erosion eliminated due to slow release of water through clayey soils.
- EPA Guidelines do not require a Leachate Collection and Removal System if landfill operator implements strict waste acceptance criteria. Due to low

permeable nature of the soil, any water within the waste body will not drain freely to a collection sump.

- *Leachate treatment* - Construction details for a wetland treatment system will be agreed prior to its construction with the EPA. EPA has the discretion to direct an alternative means of leachate disposal from the site.
- Other treatment and disposal techniques were considered at the project development stage. Most likely scenario selected from leachate generation models was for the progressive (cellular) filling and capping of the application site in four separate phases.
- Wetland process train includes anaerobic wetland (biochemical reactor) followed by iron sequestering unit followed by aerobic polishing wetland. Wetlands designed as shallow, clay-lined bowls into which reeds will be established. Two parallel treatment units allow maintenance to be carried out in half the wetland. Process additions can increase treatment efficiency by installation of blower and diffuser system or dosing of methanol and addition of iron.
- Location of surface water monitoring points dictated by accessibility. Assimilative capacity calculations are at confluence of Ballinclare Stream and Potters River – Ballinclare Stream does not maintain flow throughout the year.
- Only clean surface water run-off from the final landform will be directed (via a treatment pond) to the roadside drain in the south-east corner which drains to the Kilmacurragh Stream.
- *Biodiversity* - discharge licence application was supported by an Appropriate Assessment Screening Report which addressed the potential implications of the off-site discharge on the coastal SAC.
- *Monitoring* - already an established environmental monitoring regime in place at the quarry - environmentally sensitive receptors are essentially the same.
- *River Potter levels/ flood risk* – discharge under current licence is likely to be more extensive and prolonged than those that will arise during the operational and post-closure stage of the proposed development.

- Historical mapping indicates that observer's property was formerly a Corn Mill fed by a mill race which has a take-off point from the Potters River a short distance further upstream – as might be expected, CFRAM mapping indicates that this property is located within the flood zone of a 1-in-100-year flood event.

8.0 **Assessment**

8.1. Having regard to the requirements of the Planning and Development Act, 2000 (as amended), this assessment is divided into three main parts, the planning assessment, environmental impact assessment and appropriate assessment. In each assessment, where necessary, reference is made to issues raised by all parties. There is an inevitable overlap between the assessments, for example, with matters raised falling within both the planning assessment and the environmental impact assessment. In the interest of brevity, matters are not repeated but such overlaps are indicated in subsequent sections of the report.

9.0 **Planning Assessment**

9.1. This assessment focuses on the principle of the proposed development having regard to relevant policy and guidance for waste management from national to local level, as well as the appropriateness of the itself site for a proposal of this nature. Other issues pertaining to the proposed development and those matters raised within submissions are addressed within the EIA and Appropriate Assessment sections below.

9.2. The consistent message throughout all levels of policy in terms of waste management is that there is the need to move towards a circular economy. A Waste Action Plan for a Circular Economy released by the Government in 2020 seeks to preserve resources and prevent waste generation by shifting the focus away from waste disposal and treatment to reuse. In particular, it is recognised that the upturn in construction activity in recent years and the large projects planned under Project Ireland 2020 present huge potential in preventing and recycling construction waste.

9.3. The proposed development would adhere to circular economy principles by recycling construction and demolition wastes and recovering sand, gravel and secondary aggregates from soil waste within the soil washing plant. These waste materials

may otherwise end up in non-productive use and the proposed development will allow them to be used as a substitute for virgin quarried materials. The proposed backfilling of the quarry will also form part of a circular economy by returning the site into some sort of active use over time through progressive re-establishment of soil as a growth medium and carbon sink on site.

9.4. The need for facilities of the sort proposed has become even more pertinent due to the sharp decrease in operational landfills in recent years. It is a policy of the Eastern-Midlands Regional Waste Management Plan (E13) that *"future authorisations by local authorities, the EPA and An Bord Pleanála must take account of the scale and availability of existing back filling capacity."* An updated capacity report (Construction and Demolition Waste Soil and Stone Recovery / Disposal Capacity Update Report, 2020, Regional Waste Management Regions, Dec. 2020) noted that *"there is an increasing demand for inert landfill capacity as construction and development at brownfield sites in urban centres increases."*

9.5. Furthermore, it is noteworthy that soil and stone from many non-greenfield sites have, until recently, been deemed to be acceptable for recovery at unlined soil recovery facilities. New EPA acceptable criteria imposes tighter limits on the concentrations of potential contaminants in soil and stone that can be accepted for intake and recovery at existing authorised (unlined) soil recovery facilities. It is therefore expected that significant volumes of soil and stone waste will have to be diverted to lined disposal facilities such as that now proposed. Appropriate processing facilities need to be in place to facilitate increased reuse, recycling and recovery of C&D waste.

9.6. In general, I would be satisfied that there is a demonstrated need for the proposed development that is supported by national and regional policies relating to the sustainable management of waste. In this regard, the proposed development complies with National Policy Objective 56 of the National Planning Framework which seeks to *"sustainably manage waste generation, invest in different types of waste treatment and support circular economy principles, prioritising prevention, reuse, recycling and recovery, to support a healthy environment, economy and society."*

9.7. At a local level, it is an objective of the Wicklow County Development Plan (WE3) *"to facilitate the development of existing and new waste recovery facilities and in particular, to facilitate the development of 'green waste' recovery sites."* Appendix 1 of the Development Plan sets out development and design standards for proposals to reclaim, regenerate or rehabilitate old quarries by filling or re-grading with inert soil or similar material. It is stated that the acceptability of proposals shall be evaluated against key criteria relating to landscape and biodiversity impacts, surface water flows and site access. These issues are address in the EIA section of this report below.

9.8. Requirements are also set out for applications for the development of commercial waste disposal or recycling facilities catering for the disposal or reuse of inert clean soils, clay, sands, gravels and stones. It is stated that these facilities shall only be permitted at appropriate locations where *inter alia* there is a proven need, there will be no significant impacts on designated sites, and where there are no detrimental impacts on residential amenity, flora and fauna, and the surrounding road network. These issues are addressed in the EIA and Appropriate Assessment sections of this report.

9.9. Overall, I would be satisfied that the proposed development is in compliance with the strategic objectives of national and regional policy on waste management. The proposal will contribute towards the circular economy and will successfully reuse existing infrastructure to rejuvenate the site into a useful purpose during its operational and post-operational stages. The site has good access to the national and regional road network to the south of the greater Dublin area and it has been adequately demonstrated by the applicant that there will be a need for such a facility. The proposal would therefore be acceptable in principle and in accordance with the proper planning and sustainable development of the area subject to an assessment of the issues addressed hereunder.

10.0 Environmental Impact Assessment

10.1. Introduction

10.1.1. The proposal comprises the development and operation of an inert landfill facility at the existing Ballinclare Quarry, together with the establishment and operation of a

construction and demolition (C&D) waste recovery facility and installation and operation of a soil washing plant to recover sand and gravel aggregate from soil waste. The proposed landfilling activity is classified as *'deposit onto land'* and the associated development as a *'waste disposal facility'* in National and European waste management legislation. The C&D waste recovery activities are classified as *'recycling and reclamation of other organic materials which includes… recycling of inorganic construction materials'*. An EPA waste licence is required for the proposed development.

10.1.2. Part 2 of Schedule 5 of the Planning and Development Regulations, 2001 (as amended) sets out development for the purposes of Part 10 and includes *"Installations for the disposal of waste with an annual intake greater than 25,000 tonnes not included in Part 1 of this Schedule."* The proposed inert landfill and C&D waste recovery facility will have a combined annual intake of 800,000 tonnes per annum and is therefore a prescribed class of development for the purposes of EIA.

10.1.3. Having regard to the proposed development, and pursuant to the criteria set out under Schedule 5 of the Planning and Development Regulations, 2001 (as amended), an Environmental Impact Assessment Report has been prepared for the proposed development, which assesses the cumulative impact of the proposed inert landfill and C&D waste recovery facilities with any other relevant existing and permitted plans and projects in the surrounding area.

10.1.4. Directive 2014/52/EU amending the 2011 EIA Directive was transposed into Irish legislation on 1st September 2018 under the European Union (Planning and Development) (Environmental Impact Assessment) Regulations, 2018. The EIAR was submitted to the Board on 20th April 2021 and is therefore assessed under the provisions of the new Directive.

10.1.5. An examination has been carried out of the information presented by the applicant, including the EIAR, and the submissions made during the course of the application for approval. A summary of the results of the submissions by the Planning Authority, prescribed bodies and other observers has been set out in Sections 6 and 8 of this report. The main issues raised specific to EIA can be summarised as follows:

- Impacts on population and human health.
- Impacts to biodiversity.

- Impacts on the water environment.
- Impacts on the landscape.

10.1.6. These issues are addressed below under the relevant headings, and as appropriate in the reasoned conclusion and recommendation including conditions.

10.1.7. I am satisfied that the EIAR has been prepared by competent experts to ensure its completeness and quality, and that the information contained in the EIAR and supplementary information provided by the applicant, adequately identifies and describes the direct and indirect effects of the proposed development on the environment, and complies with article 94 of the Planning and Development Regulations 2000, as amended.

10.2. EIAR Content and Structure

10.2.1. The EIAR is presented in two volumes comprising the non-technical summary and the main report. In general, I consider that the content and scope of the EIAR is acceptable and in compliance with the EIAR Directive and the Planning and Development Regulations, 2001 (as amended).

10.2.2. The non-technical summary gives a concise synopsis of the EIAR and is written in language that can be easily understood. I am satisfied that the EIAR adequately describes the proposed development to include information on the site, design and size of the site and proposed development. The applicant has also carried out an assessment of reasonable alternatives relevant to the proposed development and its specific characteristics. A baseline scenario with and without the proposed development is assessed and a description of the factors likely to be significantly affected by the proposed development is set out, together with any direct, indirect, secondary, cumulative, transboundary, and short-long term effects of the proposed development. A description of forecasting methods including difficulties encountered and the main uncertainties, as well as measures envisaged to avoid, prevent, reduce or off-set significant adverse effects and any monitoring arrangements are included for both construction and operational phases. The vulnerability to risk of major accidents is also described, along with any measures to prevent or mitigate the significant adverse effects on the environment. Details of scoping consultations are included and there is an adequate list of experts who contributed to the EIAR.

10.2.3. Overall, I am satisfied that the information provided is reasonable, up to date and sufficient to allow the Board to reach a reasoned conclusion on the significant effects of the proposed development on the environment, taking into account current knowledge and methods of assessment.

10.3. Reasonable Alternatives

10.3.1. The EIAR must include a description of the reasonable alternatives studied by the developer, which are relevant to the project and its specific characteristics, as well as an indication of the main reasons for the option chosen, taking into account the effects of the project on the environment.

10.3.2. Chapter 3 of the EIAR demonstrates the need for the proposed development in terms of waste policy and regulatory change. Alternative locations are considered as well as the do nothing alternative. It is submitted that the site is particularly suited for the proposed development given its proximity to the M11 and R772 and permitted traffic levels associated with previous quarry activities. There has also been an increased level of construction activity, which has generated extra demand for waste outlets to accept inert soil and stone for disposal or recovery.

10.3.3. In addition, the Eastern Midlands Waste Management Plan recognises the unsuitability of alternative outlets for infilling/ backfilling on ecological/ biodiversity grounds. Moreover, there are now more onerous waste acceptance/ intake criteria at soil waste recovery facilities in terms of soil and stone from non-greenfield sites, which until now, were deemed to be acceptable for recovery at unlined soil recovery facilities. The applicant expects an increased proportion of soil and stone waste to be diverted in future to lined landfill facilities.

10.3.4. With respect to alternative locations, the importance of proximity to markets and good transport links is highlighted from both a commercial and environmental perspective. Compared to development at a greenfield site, the restoration of a former quarry is considered to be a logical and progressive solution, which is compatible with past activities. Environmental impacts and mitigation measures are similar and much of the necessary site infrastructure is already in place. Upon completion, the original landform will be reinstated.

10.3.5. Overall, there are unlikely to be many other strategically located inactive quarry sites of comparable size within the southern part of the Greater Dublin Area within/ above a poor aquifer. Having regard to the above, the proposed development will be more in keeping with the principles of sustainable development and public policy in respect of the circular economy than alternative sites. Under a do-nothing scenario, it is unlikely that the lands would be restored to any long-term beneficial land use and there would be a continued risk of adverse impact on underlying groundwater. It may also be necessary to haul inert wastes over greater distances.

10.3.6. In general, all reasonable alternatives that are relevant to the project and its specific characteristics are clearly presented in the EIAR. The main reasons for the chosen proposal and the development of the design process are set out, together with the background for the chosen option. I would be satisfied that this section of the EIAR is sufficient to comply with the provisions of Paragraph 1(d) of Schedule 6 of the Planning and Development Regulations, 2001 (as amended).

10.4. Likely Significant Effects on the Environment

10.4.1. This section of the EIA **identifies, describes and assesses** the potential direct and indirect effects of the project under each of the individual factors of the environment (population and human health; biodiversity; land, soil, water, air and climate; material assets, cultural heritage and the landscape; and the interactions between these factors). Baseline characteristics, cumulative information and an evaluation of impacts on each sensitive aspect are set out, together with mitigation measures and residual impacts.

10.5. Population and Human Health

10.5.1. Chapter 4 of the EIAR describes the general characteristics of human activity and health status in the study area. Issues relevant to the human environment that are covered in this chapter include employment, human health, amenity, traffic and land-use. The cumulative impact with other projects and activities is considered and conclusions are drawn in terms of impact during construction, operational and post operational stages.

10.5.2. Ballinclare Quarry straddles the townlands of Ballinclare and Carrigmore in eastern Co. Wicklow approximately 2.5km north-west of Kilbride and 2.5km south of Glenealy. The site is within Dunganstown West Electoral Division and Glenealy and Dunganstown South Electoral Divisions are to the north and south/ east respectively.

10.5.3. The existing receiving environment is rural in character with undulating agricultural lands and forestry the main land uses. There are one-off rural dwellings and farmsteads along local roads, amounting to a total of 13 no. residences within 500m of the site boundary and a further 18 no. within 1km. Most of these properties are situated to the north and west.

10.5.4. The main access to the site is along the L1157 local road. The M11 lies appropriately 400m to the east of the site boundary and Junction 18 is c. 3.5km to the north-east along the L1113 local road. The R772 regional road (former N11) continues parallel to the M11 and is accessed at the Tap Café to the south-east.

Characteristics of the Proposed Development

10.5.5. Planning permission is sought for the establishment of an integrated inert waste management facility at Ballinclare Quarry to include the backfilling of the quarry, as well as the operation of a C&D waste recovery facility and soil washing plant. The total intake capacity of the inert waste landfill facility will be approximately 6,165,000 tonnes, and upon completion, the site will be restored to scrub/ grassland habitat. The activities will generate up to 150 HGV return trips per day with all traffic being routed along the L1157. At the maximum intake rate of 750,000 tonnes per annum, the inert landfill could be completed in a minimum of 8.2 years and with an average intake rate of 350,000 tonnes per annum, activities could extend to 17.6 years.

10.5.6. During the construction and operational stages of the proposed development, there will be a workforce of at least four people employed at the facility on a full-time equivalent basis. The proposed facility will also support indirect employment for hauliers, sub-contractors, maintenance contractors, environmental monitoring personnel and advisors. C&D operations and associated employment would cease upon completion of landfilling activities on site.

10.5.7. Opening hours are intended to be the same as the permitted quarry, i.e., 08:00 to 18:00 hours Monday to Friday and 08:00 to 14:00 on Saturdays, with waste intake and handling limited to 10 Saturdays per year. Maintenance work only will be

undertaken on other Saturdays and the facility will be closed on Sundays and public holidays.

10.5.8. Safeguards will be put in place to ensure that only acceptable inert wastes are received and handled. Controls will also be established for noise generation, dust, birds and vermin, odour, litter, invasive species, fire and landscape and boundary treatment. An environmental management programme will monitor and manage emissions from the proposed waste facility.

Potential Impact of the Proposed Development

10.5.9. The potential impacts of the proposed development on population and human health are summarised as follows:

- Rate of inert waste intake and period over which these activities proceed means that the duration of any localised effects will generally be short-term.
- Initial construction phase will involve the securing of the perimeter, dewatering, removal of legacy infrastructure, new infrastructure and repair of existing infrastructure, clearance and levelling of ground and construction of wetland treatment area, installation of soil washing plant, upgrading of internal roads and establishment of environmental controls and monitoring. This phase is likely to provide temporary employment for at least three people (general operative/ plant or machinery operators/ site manager and others employed indirectly on doing preparatory/ site establishment works).
- *Employment* - Subsequent operational phase will entail C&D waste management facility, importation of inert waste (6,165,000 tonnes), importation of C&D waste (50,000 tonnes per annum), separation of wastes, temporary stockpiling, and restoration of final landform. This phase will support four full time jobs (facility/ site manager and various duties including plant and machinery operation, processing plant, waste inspections, record keeping, etc). There will also be indirect employment for hauliers, sub-contractors, etc.
- Proposed development will indirectly support both the local and regional economy through additional waste recovery and disposal capacity.

- Established maintenance will be carried out during post operational stage for up to 3 years over a minimum of 3 visits per year, thus providing some intermittent, short term employment.
- *Human health* – construction and operational stage impacts on air, noise, land and water including dust generation particularly during dry weather, noise generation, risk of importing contaminated materials and their placement on land, and risk of accidental spillages to groundwater.
- Following cessation of landfilling and final restoration/ seeding, any potential effects on air, noise, land and water would cease and there would be no consequent effects on human health.
- *Amenity* – construction and operational stage impacts could generate dust and noise causing nuisance to the amenities of the surrounding area.
- Increase in intermittent van/ HGV movements over local road network impacting on its amenity use.
- Visual impact of plant and equipment work at, and moving across, the application site particularly in later stages as levels rise.
- *Traffic* – assessment of traffic impact in Chapter 14 of the EIAR concluded that, with the proposed road improvement works to the L1157, no likely significant effect on road/ traffic safety or capacity will arise.
- There will be a permanent reduction in HGV movements upon completion of the inert landfilling/ waste recovery activities with consequent improvement for the human environment.
- *Land use* – Benefit of reinstatement of subject lands to grassland/ scrub habitat with some possible grassland based agriculture and removal of unsightly extractive void.

Mitigation measures

10.5.10. Potential impacts on population and human health are mitigated by the measures outlined below under land, soils and geology; hydrology and hydrogeology; air quality; noise; material assets; landscape; and traffic.

10.5.11. Other measures include the maintenance of existing perimeter trees and vegetation to reduce visual disturbance to the landscape and provision of screening for air and noise emissions. Environmental emissions will be subject to monitoring to ensure compliance with emission limit values.

Residual Effects and Conclusion on Population and Human Health

10.5.12. With implementation of mitigation measures, there will be acceptable and not significant residual effects of population and human health.

10.5.13. The employment impacts of the proposed development are considered to be medium term, direct and positive during operation and temporary and minor positive during construction and post operational stages. There will be small permanent positive impacts of the local landscape character and on local views and no long-term significant effects on amenity.

10.5.14. Overall, it is considered that there will be no significant adverse impacts of population and human health during the construction, operational or post operational phases of the proposed development. I am satisfied that the impacts identified would be avoided, managed or mitigated by measures forming part of the proposed development, proposed mitigation measures and measures within suitable conditions, and that no significant direct, indirect or cumulative adverse effects on population and human health are likely to arise.

10.6. Biodiversity

10.6.1. Chapter 5 of the EIAR evaluates the impacts on biodiversity of the proposed development by describing the existing baseline conditions; determining the important ecological features; identifying the potentially significant ecological effects; and considering any cumulative impacts. The Board is advised that an Appropriate Assessment is carried out in Section 11, which considers if the proposed development, individually or in combination with other plans and projects would adversely affect the integrity of any European site, in view of each relevant site's Conservation Objectives.

10.6.2. Baseline information was sourced from desk-based studies and field surveys. All statutory and non-statutory designated sites, and protected, rare and notable species within 2km of the site were examined from NPWS and National Biodiversity Data

Centre sources. A habitat survey was carried out to record and classify the habitat types and to assess the potential to support protected, rare or notable species (mammals, bird, reptiles, amphibians and invertebrates), and any other important ecological features. An initial walkover survey was conducted on 30th May 2019 with a follow up site visit on 29th May 2020.

10.6.3. The proposed development site covers an area of 32.5 hectares with a quarry extraction void of 17.2 hectares. The quarry floor is at a level of approximately 52m OD at the western end and the sump is 22m OD at the central eastern area. There was a concrete batching plant, aggregate plant and asphalt plant to the south-east of the quarry and other facilities include site offices, weighbridge, canteen, toilets, wheelwash, fuel storage area, garage and lab. A concrete yard was built as part of the recent quarry permission (2016) and there are a number of former farm buildings on site. The existing wastewater treatment system including settlement ponds are situated to the west of the site.

10.6.4. There are trees and scrub along the south-western boundaries enclosing an area of improved agricultural grassland. Areas of scrub are location to the east and within the site, together with wet grass land, recolonising bare ground and spoil and bare ground. The surrounding landscape comprises mainly of mixed agricultural lands and blocks of woodland. Potter's River flows to the north and east of the proposed development site and there are a number of other streams and drains in the vicinity. Most habitat features in the study area are local (lower) value and some are of local (higher) value.

10.6.5. Species that were identified on site from desktop and field surveys include bat assemblage, rabbit, fox, stoat, pine marten, brown rat and grey squirrel. A total of 19 bird species were recorded during surveys with Peregrine Falcon being the only species listed under Annex I of the EU Birds Directive. It was not recorded as breeding at the time of the survey. No red listed species were recorded but three amber listed species were. Common frog tadpoles and adult smooth newt were recorded within the settlement ponds and the NBDC recorded a number of red listed butterfly species.

Characteristics of the Proposed Development

10.6.6. The proposed development is for the development and operation of an inert, lined landfill facility to backfill Ballinclare Quarry and to ultimately restore ground levels to the original landform.

10.6.7. The proposed development also provides for the construction of a (passive) wetland treatment system and attendant drainage infrastructure to treat surface water run-off/ groundwater collecting in the sump/ floor of the quarry area and from the C&D waste recovery area prior to discharge off site to Ballinclare Stream. The wetland treatment area is to be retained as a wildlife feature after quarry restoration.

10.6.8. Most views into the quarry are screened by roadside and perimeter vegetation. Additional planting of native tree/ hedgerow and partial restoration of former field boundaries are proposed as part of the overall restoration plan for the site. An updated survey of the entire site boundary will take place prior to commencement of development and replacement stock fencing and hedgerow strengthening or fortification with additional planting will take place.

10.6.9. Mobile lighting will be provided around offices/ facilities/ fixed plant, at the site entrance and around active inert landfill areas and the C&D waste recovery area. Fuel and oil will be stored in existing bunded storage tanks. Refuelling will take place over the existing concrete hardstanding and surface water from this area will pass through an existing hydrocarbon interceptor.

10.6.10. Other site preparation works include the cutting and mulching of any existing scrub and vegetation; excavation, clearance and levelling of existing ground at the proposed wetland area and construction of the wetland treatment area; and establishment of environmental control and monitoring infrastructure.

Potential Impact of the Proposed Development

10.6.11. The potential impacts on each of the important ecological features potentially affected during the construction and operational phases of the proposed development are summarised as follows:

- Potential for habitat loss, damage and fragmentation impacting on FL8 – Other artificial lakes and ponds, WN1 – Oak-birch-holly woodland, GS4 – Wet grassland, Bat assemblage, Bird assemblage, common frog and smooth newt.

Can occur directly or indirectly through land use change or water management. Fragmented habitats are likely to be more vulnerable to external factors and habitat loss can result in direct loss of individuals or populations of animal species or by increasing levels of stress.

- Potential for disturbance from human activity, noise and vibration impacting on bird assemblage. Level of disturbance from human activities depends upon a number of factors including sensitivity, tolerance and alternative habitat. Certain species can be impacted by noise up to 300m from source. Proposed site activities are considered to be acoustically unnoticeable at Deputy's Pass SAC. Visual disturbance for many species is stated in the EIAR to be generally below 300m in open situations.
- Dust deposition impacting on WN1 – Oak-bird-holly woodland and GS4 – Wet grassland. Where large amounts of dust are deposited on vegetation over a long time-scale there may be some adverse effects on plants.
- Changes in water quality (ground and surface water) affecting Potter's River. Common frog and smooth newt. Surface water can be contaminated by nutrients or organic and inorganic compounds. Groundwater contamination can occur where there is direct recharge or where there is ground and surface water hydraulic connectivity.
- Creation of the new wetland water treatment area will result in the removal of seven of the pre-existing settlement lagoons which support populations of common frog and smooth newt.
- Ultimate restoration of the quarry is likely to have a positive beneficial effect on wildlife.
- No increase in the level of suspended solids is anticipated within the Potter's River as a consequence of the development proposals. Discharge will have a positive effect in respect of mercury as the levels of mercury in the water being discharged will be lower than those recorded in the Potter's River.
- Construction and operation of the inert waste management facility and the ongoing landfill and recovery activities at the quarry will not result in the loss of any known feature used by bats or with potential to support roosting bats.

- A minor positive residual impact is anticipated as a result of the creation of a large area of high-quality foraging habitat for bats, due to the creation of the water treatment wetland.

Mitigation Measures

10.6.12. Mitigation measures for the construction and operational phases of the proposed development on biodiversity are summarised as follows:

- Translocation of the amphibian populations from settlement lagoons to suitable already existing onsite habitat that will not be impacted by the construction process. Creation of the wetland habitats for the water treatment process will produce high quality foraging habitat for amphibians and some areas of standing water that could potentially be utilised.
- The ponds should each have a surface area of at least 150 sq.m., with shallow sloping edges to encourage emergent vegetation, and a deeper area that will remain permanently wet and discourage colonisation by reeds or reedmace (approximately 1m to 1.5m deep).
- Mitigation measures required to ensure compliance with Wildlife Act 1976 (as amended) prohibiting the killing, injuring or taking; the damage, destruction or taking of nests in use or being built; and the taking or destruction of eggs, where any nest sites are found to be present in the quarry faces / exposures during landfilling operations.

Residual Impacts and Conclusions on Biodiversity

10.6.13. Impacts on biodiversity arising from the proposed development are examined in the biodiversity chapter of the EIAR. The proposed development is not predicted in the EIAR to have any significant residual negative impacts and may have minor positive impacts for biodiversity at the local level. An Appropriate Assessment of the impact of the proposal, in combination with other plans and projects, is carried out in Section 11 of this report.

10.6.14. A number of issues relating to biodiversity were raised within submissions to the Board by third parties and prescribed bodies. In response to the submission from the NPWS, the applicant confirmed that the ecological evaluation and impact assessment approach is based on Guidelines for Ecological Impact Assessment in

the United Kingdom and Ireland ("CIEEM guidelines") (CIEEM, 2018) and this is accepted as the standard for assessing biodiversity. The NPWS has concerns that ecological surveying is insufficient to fully describe the biodiversity which has developed in the quarry.

10.6.15. With respect to otter, the NPWS considered that a further survey is required to demonstrate the present or absence of otter on site and that mitigation measures may be required. In response, the applicant confirmed that no otter habitat features such as holts or couches were noted during surveys, and it is submitted that the wetland will be suitable habitat for prey species for otter and will remain available as otter foraging areas. It appears, however, that the applicant did not carry out any additional survey work in response to this submission.

10.6.16. The NPWS note that the application site is likely to support an exceptional population size class of smooth newt. Further information is advised to ensure that mitigation is adequate to rule out significant negative effects. No details are given of the initial amphibian survey, proposed capture translocation methodology, suitability and habitat capacity of receptor ponds or follow up monitoring. Clarification is also sought on whether the quarry void was surveyed for amphibians. In response, the applicant highlights that the current planning permission and discharge licence provides for quarry dewatering. However, no further detail is provided other than the commitment that some of the current lagoons will be maintained and frogs and newts will be able to move freely between new wetland and old ponds without the need for active relocation.

10.6.17. The NPWS state categorically that peregrine falcon breed within the proposed development site. It had been stated in the EIAR that peregrine was not recorded as breeding at the time of the habitat survey. The NPWS recommended that survey data and other information relating to peregrine should be retrieved in order to adequately assess impacts and, where possible, to include measures to protect the species during breeding and conserve breeding habitat during operational and restoration stages. In response, the applicant acknowledged the presence of a nest high up on the quarry face and stated that consideration would be given to amending the upper landfill level. If backfilling materials are to be placed against the nesting site, this will be done outside the breeding season if the birds have not found an alternative site due to ongoing landfilling activities.

10.6.18. With respect to other breeding birds, the NPWS recommended that a data request form should be submitted to retrieve survey and other data in relation to kestrel at the proposed development site. It is also recommended that a breeding bird survey is carried out. In response, the applicant refers to Appendix 5-B of the EIAR which lists the birds recorded on site during habitat surveys (May 2019). It is noteworthy that kestrel is not included in this list and the applicant does not appear to have carried out any additional survey work.

10.6.19. The NPWS consider that a bat survey should have been carried out on site and along the local road where widening works are proposed. In response, the applicant submits that the quarry walls have been assessed and it has been determined that there are no suitable cracks or crevices to house significant populations of bats and there are no signs of bat roosts. It appears, however, that no additional survey works has been carried out in the proposed development site or along the public road.

10.6.20. The NPWS is aware that greater broomrape and green-flowered helleborine have been recorded in the vicinity of the site and therefore a rare and protected plant survey should be carried out. The applicant submits that a season survey will be conducted to look for these species prior to excavation works for the proposed wetland facility. The NPWS also consider that an invasive species management plan should be provided at planning stage in accordance with relevant guidance for the Board and other statutory consultees to review. The applicant has not submitted an invasive species management plan at further information stage. It is submitted that waste licence will include the requirement for an invasive species management plan to be submitted prior to commencement of intake.

10.6.21. Finally, it is advised by the NPWS that any road improvement works must also be subject to habitat, bat, mammal and breeding bird surveys. In response, it is noted by the applicant that these works will be restricted to the existing road curtilage and there will be no impact on bats, badgers or breeding birds. In terms of planned after use, the applicant is open to providing woodland habitat; however, it is highlighted that imported soils may be poor/ nutrient deficient and poorly drained and therefore the establishment of trees across the site could take a long time.

10.6.22. Overall, I consider that the survey effort for the proposed development is not sufficient for the Board to fully assess the impacts of the proposed development on biodiversity. The applicant was afforded the opportunity to respond to the NPWS and was advised to carry out additional surveys for otter, birds, bats and rare and protected plants. An invasive species management plan is also not available for the Board or other statutory bodies to assess. In addition, I note the concerns of third parties in relation to the now established habitat in the quarry. There is also concern that a detailed ecological assessment has not been carried out on the Potter's River and its tributaries, e.g. detailed ecological survey, kick sampling and biologicical Q rating, chemical sampling and detailed description of river as ecological resource.

10.6.23. It is considered that the identified impacts on biodiversity will not be avoided, managed and mitigated by the proposed measures contained within the EIAR. The proposed development would therefore have unacceptable direct and indirect impacts on biodiversity. I am not satisfied that the site has been adequately surveyed and that appropriate mitigation measures are proposed with respect to impacts on water quality, habitat and species to minimise the impacts of the proposed development to a non-significant level.

10.7. **Land, Soil, Water, Air and Climate**

10.7.1. This assessment deals separately with the above environmental factors as they appear in the EIAR. Chapter 6 addresses Land, Soils and Geology and Chapter 7 covers Water. Air Quality, Climate and Noise are dealt with under Chapters 8, 9 and 10 respectively.

10.7.2. The baseline study methodology for the Land, Soils and Geology chapter includes a desk study and assessment of borehole information, a geophysical survey and findings from a walkover survey of the site and surroundings. Groundwater monitoring wells, site investigation data and regional data sources were also assessed for the hydrology and hydrogeology chapter. Dust monitoring, EPA air quality data and climate/ weather data and projections were investigated for the air quality and climate chapters and environmental noise surveys were carried out at the noise sensitive receptors.

10.7.3. The receiving environment comprises an existing quarry where soil cover and underlying subsoil have previously been stripped. Previously existing soils comprised of acid brown earths and brown podzolics, lithosols and regosols, and surface water and groundwater gleys. Bedrock geology is identified as Carrigmore Diorite which is described as massive, uniform dark grey-green, fresh and very strong. Extraction at the quarry ceased after naturally occurring asbestos was exposed within the diorite at the quarry. Kilmacurra Quarry located approximately 500m to the south is a County Geological Site; however, this site will not be affected by the proposed development.

10.7.4. The proposed development site is within the Ovoca-Vartry Catchment and Redcross Sub-Catchment in the Eastern River Basin District. The water receiving environment includes the Potter's River to the north and east of the site (c. 300m), and Kilmacurra Stream approximately 200m to the south. The existing quarry void is currently flooded with surface water run-off and groundwater estimated to be of the order of 270,000m^3. Surface water quality at both watercourses is moderate with risk of deteriorating. There is no discharge from the quarry void off site to the Potters River at present. There are areas with an indicative pluvial 1%AEP (100 year) event (associated with overland flow and ponding) in the vicinity of the proposed development site along the Potters River.

10.7.5. The proposed development site is located within the Wicklow Groundwater Body (GWB) and groundwater at the application site is of good status. However, groundwater testing identified a number of exceedances for ammonia, orthophosphate, total cloriforms, potassium, arsenic, iron, mercury, manganese, nickel and lead. Site investigations carried out in 2014 comprising 3 no. groundwater monitoring boreholes and 2 no. rotary cored boreholes. Diorite bedrock was evident to 40m below the quarry floor and there were minor groundwater inflows at most well locations apart from GW2 where a suspected cavity caused significant inflow. The diorite bedrock is classified as a poor aquifer (Pl) which is unproductive except in local zones. Groundwater vulnerability beneath the application site is classified as being extreme, with rock at or near the surface. GSI groundwater recharge mapping estimates the maximum recharge capacity to be 100mm/year. Poor yields have been recorded at a number of groundwater supply boreholes within 1km of the site.

10.7.6. Residential property in the vicinity of the proposed development site generally comprises of farmsteads and one-off houses. There are 13 dwellings within 500m of the site boundary and 20 dwellings within 1km. Five commercial premises are within 1km of the site including Kilmacurragh Arboretum and there is an amenity area (forest) approximately 50m to the north. Noise and dust monitoring location have been selected to take account of sensitive receptors. Recorded baseline dust deposition rates at Ballinclare over the monitoring period in 2019 are below the guideline emission limit value (ELV's) of 350mg/m2 /day. Monthly noise measurements were undertaken at each monitoring location over a 30-minute period during daytime hours (07:00 to 19:00) each month between April and October 2019.

10.7.7. In terms of climate, data from the Local Authority Adaptation Strategy Development Guidelines projects an increase in sea level rises, storm surges, coastal erosion, heatwaves, dry spells, extreme rainfall, flooding and wind speed ranging from minor to strong.

Characteristics of the Proposed Development

10.7.8. The proposed development site will be backfilled with inert waste materials principally comprising of naturally occurring soil, stone and broken rock excavated in the course of construction and development projects, together with some construction and demolition (C&D) waste complying with the waste acceptance criteria for inert landfills set by Council Decision 2003/33/EC. Other activities on site include the recovery of C&D waste within a recovery shed on an intermittent basis. C&D waste will be held in unprocessed stockpiles and recovered/ recycled aggregates will be transferred to processed stockpiles. Granular soil / claybound C&D intake will be diverted from disposal at the landfill facility and submitted for recovery at the soil washing plant to be set-up in the south-eastern corner of the application site.

10.7.9. The proposed inert landfill and waste recovery activities will be largely confined to the existing development footprint. The proposal will also include a constructed wetland in an area of the site that currently accommodates existing settlement ponds and an adjoining area of wet and/ or improved agricultural grassland. The backfilled quarry will be restored to grassland/ scrub habitat at pre-extraction ground levels. Existing berms around the western and southern boundaries will remain in place.

The proposed development will provide for clay liners across the exposed rock faces at the quarry and this will remove any cause for concern in respect of the long-term health risk associated with the naturally occurring asbestos within existing rock exposures.

10.7.10. To enable the quarry to be re-engineered as a landfill, the flooded quarry void will first need to be emptied of water. It is anticipated that his will be undertaken in accordance with the conditions attached to the current discharge licence for the quarry, which is a maximum daily discharge of 72m^3 /hr (1,728m^3 /day).

10.7.11. An on-site (passive) wetland treatment system (3.8 hectares) will be installed for the treatment of discharge from the proposed inert landfill and C&D waste recovery facilities. This system will comprise of (i) leachate reception tank and self-bunded storage tank; (ii) pump containing feed, discharge and chemical dosing pumps; (iii) passive wetland treatment system comprising anaerobic (biochemical reactor) wetland, iron Sequestering Unit (ISU) and aerobic wetland; and (iv) off-site discharge via existing ditch / drainage channel to Potters River.

10.7.12. Environmental monitoring of noise, dust, surface water and groundwater will take place for the duration of the site backfilling and restoration works and for a short period thereafter.

Potential Impact of the Proposed Development on Land, Soils and Geology

10.7.13. The potential impacts on **Land, Soils and Geology** are summarised as follows:

- Lands have been impacted by quarry related development and are not likely to be suitable for many land uses.
- No productive or useable soils remaining across much of the application site – soils and subsoils at site considered to be of low importance.
- Further bedrock extraction at the quarry is not considered feasible or viable given the presence of naturally occurring asbestos.
- During the construction / site preparation stage, the only direct impact on land and soils will be the disturbance and loss of existing soil cover across the planned wetland area in the south-western corner of the application site – stripped soil will be reused to create wetland area and for landfill.

- Minor positive impacts on land over medium to long term at a local level as the disturbed landform is restored, thus presenting some limited future land use potential.
- Moderate positive impact over medium to long term due to the progressive re-establishment of soil as a growth medium and carbon sink.
- Moderate negative impact over medium to long term from risk of potential subsoil and bedrock contamination by way of fuel leaks and/or oil spills.
- Any potential impacts on human health from inert landfilling and recovery activities at the application site would not be via soil / geology pathways but via other pathways such as air (principally dust) and water (principally groundwater).

Mitigation Measures for Land, Soils and Geology

- Soils excavated in grassland areas in the south-western corner of the application site will be re-used where possible in wetland construction.
- Routine servicing of plant and machinery (and HGVs and lorries on occasion) at sealed concrete pavement which drains via a hydrocarbon interceptor to a soakaway area.
- Refuelling of mobile plant within quarry void only to be undertaken using double skinned bowsers.
- Oils, greases and hydraulic fluids will be stored under cover, over fuel spill trays / bunded containers within the existing site workshop / garage.
- Appropriate site management practices to reduce risks of spills.
- Relatively impermeable clay liner on the base and sides of the proposed landfill will protect ground and geological elements which would otherwise be in direct contact with waste materials.
- Applicant will ensure best waste management practice and full compliance with environmental management systems, planning consents and waste licence conditions.
- Contingency plans / procedures to deal with potential leaks and spills and emergency spill response kit will be held on site.

- Multiple level soil / waste testing regime including comprehensive on-site verification, comprising visual inspection and record of imported wastes end-tipped / unloaded at the site; basic characterisation testing to determine the leaching behaviour of the inert wastes imported to site; and frequent compliance testing covering a limited range of key waste parameters.
- Temporary side slopes in landfilled soils /waste will generally be graded at an angle no steeper than 35°.
- All temporary surfaces will be graded to facilitate overground run-off to the quarry sump or to surface water ponds developed in closed depressions within the landfilled waste, thereby minimising the volume of rainfall percolating through the landfilled materials.
- Continued monitoring of the recently installed and pre-existing groundwater wells for the duration of the landfilling and C&D waste recovery activities and for a short aftercare period thereafter.
- Bare or exposed soils / wastes will be kept to a minimum by ongoing progressive restoration of the landform and the establishment of grass cover at the earliest opportunity.
- Minimum 150mm thick layer of topsoil will be placed over the landfilled materials and final landform will be graded to facilitate long-term overground run-off toward local surface watercourses and the Potters River.

Potential Impact of the Proposed Development on Water

10.7.14. The potential impacts on **water** are summarised as follows:

- Elevated natural levels of arsenic in the water collecting in the quarry void.
- Ongoing generation of leachate from rainfall on the landfill over the operational life of the inert landfill facility and as a result of the containment provided by the basal and site liners – leachate will need to be removed and treated prior to discharge off site.
- Leachate could have potentially elevated concentrations of sulphate, reduced pH, detectable concentrations of metals and some hydrocarbons. Leachate may also be generated for a period after landfilling activities have ceased.

- Potential for direct impacts on groundwater during construction from accidental leakages of fuels and other petroleum based products from plant and machinery.
- Potential for direct impacts on the surface water receptor on site (Potters River) and its salmonid system during construction from uncontrolled discharge from flooded quarry void.
- Potential for uncontrolled discharge from quarry void to result in increased flood risk downstream of Potters River.
- Fugitive dust on HGVs leaving the site has the potential to wash into watercourses.
- Potential for contaminants in imported soil and C&D materials to impact on groundwater quality in the aquifer.
- Any contaminants in imported soil and C&D material or accidental leaking of fuels or other petroleum-based products have the potential to impact the surface water quality of the off-site discharge to the Potters River.
- Any suspended solids in the discharge have the potential to impact on surface water quality.
- No requirement to make provision for treatment for any process water associated with the soil washing plant. Top-up water will periodically be provided from the on-site water management system. Filter cake will be disposed at the adjoining landfill facility.
- During post operation, there will be no effluent discharge to watercourses - natural storm / surface water run-off from the restored site will be directed via site drains to local watercourses.

Mitigation Measures for Water

- Mitigation measures for land, soils and geology will also apply to hydrology/ hydrogeology.
- Quarry will be dewatered under the terms of the existing discharge licence (Ref: WPL 116), which provides for the use of existing settlement ponds and bespoke water treatment system. Elevated levels of arsenic in quarry void water – will require treatment via a bespoke Siltbuster system, which will also treat

suspended solids from the water. Siltbuster system will remain in place to treat discharge over the life of the proposed development.

- Should the capacity of the settlement ponds be exceeded then additional ponds will be constructed. The location of existing back up settlement ponds is shown on Figure 2-1 of this EIAR.
- Low permeability cap installed to reduce the infiltration of rainfall will significantly reduce the volume of leachate generated.
- Most suitable option for treatment of leachate which principally requires reduction of inorganic substances is considered to be an on-site (passive) wetland treatment system - wetland areas can be independently placed out of service to allow for remediation and replenishment of infiltration / substrate media whilst still allowing on-going treatment of leachate through the active bed.
- Volumes of leachate requiring treatment at the facility will be limited by the progressive restoration of the completed landform, thus minimising the amount of leachate generated and requiring treatment.
- Effectiveness of passive wetland treatment systems can be enhanced by the chemical dosing, aeration or other such processes if required – allows system to handle higher contaminant loads or flows for periods of time.
- Wetland area at the western end of the application site will remain in-situ and will be allowed to naturally evolve and re-wild – will serve as a long-term soakaway, settlement lagoon and/ or attenuation pond for surface water run-off from the restored landfill and C&D waste recovery area.
- Residual southern flank of the site will be drained to a swale along the southern boundary that will discharge to an existing stream which flows to Kilmacurra Stream.
- Final surface of the site will be graded, and subsoiling will be undertaken to improve soil drainage and functioning to promote grass growth and restore the site to grassland / scrub habitat.
- During the construction stage, discharge water to the Potters River will comply with the conditions in the discharge licence - discharge water will be treated in a

water treatment plant and will pass through the settlement lagoons / attenuation pond at the site.

- Volume of water discharged from the site compared to flood flows in the Potters River is considered to be negligible - discharge water will not result in increased flood risk in the river.
- Suitable uncontaminated natural, undisturbed soil waste and/or soil by-product which conforms to an engineering specification will be used in the construction of the 1m thick basal and side clay liners of sufficiently low permeability to protect groundwater and the surrounding aquifer, in line with accepted inert landfill design standards.
- Dewatered groundwater and storm runoff from the inert landfilling activities will be collected at a sump and pumped up to the approved (Siltbuster) treatment plant and from there to the proposed on-site (passive) wetland treatment system before being discharged off-site to the Potters River. Separate drainage system will be provided to reduce pressures and dewater groundwater beneath the basal liner.
- Any non-inert waste or C&D waste identified amongst incoming waste consignments will be rejected. Any waste subsequently suspected to be non-compliant will be transferred to the waste inspection and quarantine facility for closer examination/ testing. Quarantine area will be roofed and closed on all four sides with concrete floor to protect from rainfall and run-off.
- Appropriate seasonal timing of site restoration works, soil subsoiling and grass seeding will reduce the any adverse impacts of soil erosion across the site.

Potential Impact of the Proposed Development on Air

10.7.15. The potential impacts on **Air** are summarised as follows:

- Potential for dust impacts that will be temporary and variable from day to day depending on prevailing meteorological conditions, level and location of activity.
- During site preparatory works, activities will be largely confined within the application site - dust risk category would be considered ‘low risk’ to ‘negligible’.

- If trackout activities are not mitigated, the effects of dust during dry and windy conditions could possibly lead to occasional increases in nuisance dust immediately surrounding the application area - these are not considered to be significant given the limited duration of such meteorological conditions and the limited change in the extent and scale of proposed activities.
- Sources of potential particulate emissions include material transfer on site, material storage, traffic (transfer to site), C&D/ soil stockpiling, soil washing plant and C&D processing activity. Emission potential considered to be high when dry materials are handled in strong windy weather and on unpaved surfaces.
- There is potential for moderate adverse dust emission impacts at residential property R10 and the forest / amenity area to the north of the application site.
- Only the edge of the forest could be impacted to any degree by potential fugitive dust emissions arising from the proposed inert waste activities having regard to the screening of the high ground and nature of forest/ amenity area to the north.
- Air Quality Assessment indicates that without mitigation there is generally an insignificant to moderate adverse risk that dust may cause an impact at sensitive receptors within 500m of the source of the dust generating activities.
- Air Quality Assessment suggests that there is generally an insignificant to moderate adverse risk that dust may cause an impact at sensitive ecological receptors within 500m of the source of the dust generating activities. Proposed development will have an insignificant dust deposition impact on the Deputy's Pass Nature Reserve SAC and the Glenealy Woods pNHA ecological sites.
- Proposed development will not generate a significant change in traffic, other than to have HGVs fully laden on the way in as opposed to on the way out.
- Potential impacts in relation to increase in ambient PM_{10} concentrations are classified as 'negligible' in the EIAR.

<u>Mitigation Measures for Air</u>

- Perimeter planting and/ or dense gorse vegetation will act as a wind break to further screen any fugitive dust and prevent it from being carried any significant distance into the forested area.

- Principal factors which will reduce and mitigate emissions from the planned inert landfill and waste recovery facility will be the placement of the imported waste materials within the existing quarry void, behind the quarry faces and below surrounding ground level.
- Minimise excavator/ HGV drop heights when handling materials and minimise work in adverse / windy conditions.
- Minimise distance of onsite haul routes, restriction of vehicle speeds, use of water sprays and locate haul routes away from sensitive receptors. Use of wheelwash and road sweeper.
- Installation of fixed sprinkler system where materials consistently stockpiled if required to achieve emission limits.
- C&D processing activities carried out within the proposed waste processing shed.
- Retention of existing perimeter berms and planting and increased dust suppression activity.
- Covering every load on vehicles delivering waste materials to the site; protection/ reinforcing of perimeter vegetation; regular plant and vehicle maintenance; inspection of access and haul routes; and consideration of meteorological conditions.
- Overall implementation of effective site management practices to control dust emissions. Monitoring of dust deposition and appropriate measures to reduce measures in a timely manner.

Potential Noise Impact of the Proposed Development

10.7.16. The potential **Noise** impacts of the proposed development are summarised as follows:

- Noise sources from the proposed development include dozer, hydraulic extractor, HGV truck, C&D tracked crusher and the soil washing plant.
- Noise generated by soil and stone intake and backfilling activities will for the most part, be screened by surrounding landforms and existing quarry faces.

- EPA NG4 daytime noise criterion limits arising specifically from the proposed waste disposal and recovery activities are satisfied at all nearby noise sensitive locations.
- Cumulative short-term noise impact from recommencement of activity at Ballinclare is determined in a worst case scenario in the EIAR to be minor at R7, R8, R10, R11 and R13 and moderate at R9.
- Cumulative long-term noise impact from the landfilling and C&D waste recovery operations is determined in a worst case scenario in the EIAR to be negligible at all receptors but minor at R9.
- Due to the separation distance, the noise impact at Kilmacurragh Arboretum is assessed in the EIAR to be negligible.
- Noise criterion limits for protection of wildlife arising specifically from the proposed development activity are comfortably achieved at both of the nearest ecological noise sensitive locations (Deputy's Pass Nature Reserve SAC and Glenealy Woods pNHA).
- Worst case impact for HGV sound levels during daytime is assessed as minor.
- Potential noise impacts associated with the remedial phase of the proposed development is assessed as negligible.

Mitigation Measures for Noise

- C&D waste crushing / processing will be undertaken internally within the proposed shed unit.
- Landfilling / quarry backfilling will be carried out on a phased basis, commencing at the western side of the site and will therefore be of limited duration and at greater distance than has been assumed for worst-case noise modelling purposes.
- Existing screening berms and screen planting around the planned facility will be retained to act as acoustic barriers, inspected on a regular basis and maintained and/or strengthened as necessary.
- All mobile plant used at the development will have noise emission levels that comply with the limiting levels.

- All plant items will be properly maintained and operated in accordance with manufacturers' recommendations. Plant will be fitted with effective exhaust silencers.
- Deliveries will be programmed to arrive during working hours only and undertaken when unloading vehicles to reduce or minimise potential disturbance to local residents.
- Traffic speed within the facility will be limited / controlled and access / internal haul roads will be kept clean and maintained in a good state of repair.

Potential Impact of the Proposed Development on Climate

10.7.17. The potential impacts on **Climate** are summarised as follows:

- During the lifespan of the proposed development, there could be significant changes in frequency and intensity of weather events due to climate change.
- Direct GHG emissions may be caused by operational activities, and project decommissioning.
- GHG activities linked to the implementation of the proposed project may include transport, office space heating of buildings or loss of habitats that provide carbon sequestration.
- Proposed backfilling and recovery activity would represent a maximum of 0.0065% of Ireland's annual CO_2e emissions for the duration of these activities - GHG emissions assessed as not making a significant contribution to the global atmosphere.

Mitigation Measures for Climate

- Measures to improve the resilience of the project to extreme rainfall, flash flood, storms, wildfires and winds:
  - Consider changes / flexibility in construction / operations that allow for rising water levels and groundwater levels.
  - Consider weather warnings and create plans adequate to warning intensity.
  - Design / provide adequate surface water drainage.
  - Design / provide adequate procedures for wildfire scenarios.

- Ensure design can withstand increases in high winds and storms and ensure choice of equipment is weather efficient.
- Secure insurance for damage of assets / site incidents.

- The Applicant will adopt a GHG monitoring programme and shall establish short, medium, and long-term objectives and targets for a GHG reduction programme and energy management plan:
  - Consider using renewable energy sources / suppliers and clean energy production on site.
  - Energy efficient machinery and avoidance of unnecessary use.
  - Training programme for GHG mitigation to be provided for employees/ contractors.
  - Framework and set of indicators shall be developed to assess project preparedness for adaptation against climate change, and provision shall be made for a periodic review of plans and allocation of reporting responsibilities.

Residual Impacts and Conclusions on Land, Soil, Water, Air and Climate

10.7.18. The proposed development provides for the backfilling on an existing quarry void with inert materials and the progressive restoration of the backfilled quarry to long-term grassland/ scrub habitat. The boundary of the proposed development is already established, and the lands contained therein are necessary for the construction, operational and post-operational phases of the proposed development. The main effects to land relate to its change from a disused quarry and this may result in some minor positive impacts by presenting some limited future land use potential. The existing lands have been impacted by quarry development and are therefore considered to be of low value and importance.

10.7.19. Soil and subsoil have been largely stripped across the proposed development site and further bedrock extraction is not possible at the quarry. There will be some loss of existing soil cover at the planned wetland area and stripped soil will be reused where possible. Moderate positive impacts over the medium to long term will occur from the progressive re-establishment of soil as a growth medium and carbon sink on site. The potential for negative impacts by way of contamination from fuel leaks

can be mitigated through appropriate site management practices to reduce risks of spills. Residual impacts will be imperceptible.

10.7.20. Potter's River is located as close as 300m to the north/ east of the site and the existing discharge licence for the quarry provides for the dewatering of the quarry via existing settlement ponds with discharge to Potters River via Ballinclare Stream. Dewatering of the quarry is expected to occur over a 4-5 month period at a pumping rate and required discharge of 1,728 m^3/ day (20 litres per second). An on-site (passive) wetland treatment system (3.8 hectares) will then be installed for the treatment of discharge from the proposed inert landfill and C&D waste recovery facilities.

10.7.21. There are naturally elevated levels of arsenic in the water collecting in the quarry void. It is proposed to install a bespoke Siltbuster system to treat arsenic and to remove suspended solids. This treatment system will remain in place for the landfilling and waste recovery operations at which time it will be supplemented by the proposed on-site (passive) wetland treatment system. The wetland treatment system is considered to be the most suitable option for the treatment of leachate, which could have potentially elevated concentrations of sulphate, reduced pH, detectable concentrations of metals and some hydrocarbons. Volumes of leachate will reduce as backfilling progresses and the system can be enhanced for periods of time to handle higher loads. The wetlands will remain in place after the restoration is completed.

10.7.22. There is potential for direct impacts to groundwater and surface water from accidental leakage from machinery and from contaminants within imported soil and C&D materials. Mitigation measures for leakage and accidental spillages as outlined above for land and soils will also apply to the water receiving environment. Protocols will be put in place to ensure that any non-inert waste or C&D waste identified amongst incoming waste consignments will be rejected or kept safely in quarantine.

10.7.23. Post operation will see a low permeability cap installed over the restored landfill to reduce infiltration of rainfall. Appropriate seasonal timing of site restoration works, soil subsoiling and grass seeding will reduce any adverse impacts of soil erosion across the site and the wetland will remain in-situ to serve as a long-term soakaway, settlement lagoon and/ or attenuation pond for the restored site.

10.7.24. A submission on the application received from Irish Water notes that the proposal to bring inert materials into the quarry pit carries serious risk in respect of ground water and surface water contamination and other means of contaminations along hydrological pathways. It is highlighted that backfilling results in problems associated with contamination by fines, hard wall plaster products and other contaminants that end up with the inert materials as well as oil and diesel spillages. Irish Water suggest that the altering of topography within the site has altered the leachability of arsenic and that the proposed backfill has the potential to alter existing groundwater flows, levels and quality. Furthermore, soil washing and C&D may alter pH which could affect the mobility of metals in the effluent. Further information was recommended on the effectiveness of arsenic treatment during dewatering and operational phases.

10.7.25. A number of observers on the application also had issues regarding the potential for pollution within Potters River and domestic wells. Concerns were expressed by environmental consultants on behalf of Observer Michael Dwyer as to whether or not the proposed water treatment process utilising silt buster with dosing agents followed by treatment of landfill leachate in a wetland system of 3.8 ha with final discharge to Potters system is adequately designed, with capacity to treat increased volumes of water from the quarry. It is submitted that details should be provided on the objectives of the wetland treatment design; how each element is constructed; the nature, type and quantification of plants; how the system is to be developed and maintained; and the build-up of metals, substrate and plant matter. Furthermore, no information has been provided on the volumes of leachate, constituent/ contaminants required to be treated, as well as their concentrations, and what treatment systems were considered. There is also concern that leachate breakout will occur in the south-eastern part of the site and this will be allowed to flow untreated into the Kilmacurragh Stream.

10.7.26. In response to the above, the applicant sets out the treatment processes, which includes the anaerobic wetland (mainly for precipitation of metals and sulphate precipitation) otherwise called a biochemical reactor (BCR) followed by an iron sequestering unit (ISU) to assist with sulphate removal followed by an aerobic polishing wetland (APW) for removal of barium, chromium and organic substances. It is stated that it will be possible to tanker leachate from the site and wetlands can

be actively aerated to increase treatment efficiency by installation of a blower and diffuser system. Anaerobic wetland elements can also be enhanced by dosing of small amounts of methanol to the influent as can the performance of iron sequestering unit by the addition of iron.

10.7.27. Notwithstanding the above, the applicant highlights that construction details for the wetland treatment system will be agreed with the EPA in accordance with the provisions of any waste licence. It is noted that the EPA has the discretion to direct an alternative means of leachate disposal from the site. The EPA stated in its submission to the Board that all matters to do with emissions to the environment from activities proposed, the licence application documentation and EIAR will be considered and assessed by the EPA should a licence application be received. The EPA will incorporate conditions to ensure that appropriate National and EU standards are applied, and that Best Available Techniques will be used in the carrying on of activities. As noted by the applicant, the EPA would have the power to prevent any activity that could present a risk of pollution should it be determined that the operator was not complying with any licence conditions.

10.7.28. Having regard to the above, I would be satisfied that the quality and quantity of discharge from the proposed development will be controlled by the EPA licence and that the dewatering of the quarry can be carried out in compliance with the existing waste permit. I would nonetheless have concerns from an ecological viewpoint, as noted above, that no chemical analysis has been carried out upstream of the discharge point on Ballinclare Stream and no assessment of biological quality of the stream, no catchment studies and no assimilative capacity assessments have been conducted. Furthermore, it would appear that there will be no long-term treatment of drainage to Kilmacurragh Stream.

10.7.29. The proposed development has the potential to generate dust and noise nuisance and nearby sensitive receptors. The overall implementation of effective site management practices will help to control dust and noise emissions to insignificant levels. Mitigation measures will also be put in place to improve the resilience of the project to extreme rainfall, flash flood, storms, wildfires and winds and the applicant will adopt a GHG monitoring programme and objectives and targets for a GHG reduction and energy management. There will be no significant adverse air quality,

noise and climatic effects for both human and ecological receptors following mitigation.

10.7.30. Overall, I consider that the impacts on land, soil, water, air and climate would be mostly avoided, managed and/ or mitigated by the design and measures that form part of the proposed development, and that the cumulative effects of the proposal are not likely to give rise to significant effects that might warrant a refusal of the proposed development. It should be noted that emissions from the proposed development will largely be controlled under the EPA licence. However, there is concern from an ecological viewpoint that an adequate baseline and surveying effort has not taken place of the watercourse into which discharge from the proposed development will flow.

10.8. Material Assets

10.8.1. Material assets are addressed in Chapter 11 of the EIAR. This section addresses the existing resources pertinent to the proposed development and application site, i.e. built services (electricity, telecommunications, gas, water supply infrastructure and services) and waste management. Traffic and transport are addressed separately in Chapter 14 of the EIAR.

10.8.2. There is no mains or group water scheme in the area and private properties are served by private groundwater wells. There is also no public wastewater infrastructure serving the area. A 220kV powerline is located immediately to the east of the site. There is a non-hazardous waste landfill located approximately 3km to the north-east of the site at Ballynagran (Licence Ref: W0165-02). Traffic accessing this facility does so from Junction 18 of the M11.

10.8.3. The traffic and transport assessment compares the permitted extractive operations on site with the proposed development in terms of traffic generation. Baseline traffic conditions have been surveyed with the quarry closed and an evaluation is carried out of the pre-existing development compared to the forecasted potential traffic arising from the proposed development when operating at planned maximum capacity.

10.8.4. Road Safety Authority collision records outline that there is no significant clustering of accidents and no significant trends in the type of traffic collisions along the

receiving road environment. The haul route has a good safety record and the frequency and severity of collisions on the former N11 (R772) have significantly decreased since the opening of the M11 motorway in 2015.

10.8.5. Condition 5 of the permitted quarry development under Reg. Ref: 14/2118 limits the maximum number of HGV loads (trips) to 150 per day.

Characteristics of the Proposed Development

10.8.6. The proposed development provides for the importation, disposal and/ or the recovery of inert construction wastes generated by projects in Counties Dublin, Wicklow and Wexford. The proposal also includes a C&D waste recovery facility with the main waste types being concrete (ready-mixed, reinforced, blocks and/or pavement slabs), bricks and bituminous mixtures (hardened asphalt returns and road planings). A soil washing plant is proposed for the recovery of sand and gravel and recycled (secondary) aggregates from more granular soil intake and claybound C&D materials.

10.8.7. Overall, the total intake capacity will be approximately 6,165,000 tonnes. The maximum intake rate will be 750,000 tonnes per annum of inert waste for landfilling/ disposal and 50,000 tonnes per annum of C&D waste for recovery. The proposed development site is forecast to generate an average of 115 no. HGV trips per day when operating at maximum intake capacity.

10.8.8. Traffic to and from the proposed facility will be routed along the L1157 and improvements will be carried out along this road to include widening, strengthening and repair of overlay and markings. HGV traffic from the north will leave the M11 Motorway at Junction 18, before travelling south along R772 to the Tap Café / Restaurant at Kilbride at the junction with the L1157. Traffic from the south will use Junction 19 on the M11 to access the R772. The proposed access arrangements will replace the previous one-way system for accessing the quarry. The applicant invites the Board to attach an appropriate condition to any grant of planning permission to ensure that the proposed road improvement works are undertaken to the satisfaction of Wicklow County Council and to an appropriate standard.

10.8.9. The working hours of the proposed development will be between 08:00 hours and 18:00 hours Monday to Friday, and between 08.00 hours and 14.00 hours on

Saturday (but limited to 10 no. occasions in any given year). The facility will be closed on Sundays and Public / Bank Holidays

Potential Impact of the Proposed Development on Material Assets

10.8.10. The potential impacts of the proposed development on **material assets** are summarised as follows:

- Traffic levels will replace and will not exceed traffic levels that are currently permitted for extractive related activities at Ballinclare Quarry (up 150 HGV trips per day).
- Existing road network and proposed haul route is able to support comparable levels of HGV traffic to and from the application site.
- On completion of landfilling and final restoration activities, there will be a permanent reduction in HGV traffic movements over the local road network.
- In avoiding and minimising direct impact on groundwater, there will also be no indirect impacts on recharge to local watercourses or on groundwater supply wells at local residential properties. There will be a permanent reduction in direct risks to surface water bodies and groundwater on completion of the development.
- Proposed development is not likely to give rise to any short-to-long term impacts on services / utilities.
- Due regard will be had to the 220kV overhead power lines when landfilling along the eastern site boundary.
- Considered that the generation of waste by on-site activities over the period of the inert landfilling, C&D waste recovery and final restoration works will not give rise to any significant short-to-long term effects on land or groundwater quality or on local waste collection / off-site waste management capacity.
- Considered that the proposed development will not affect any established extractive, rural enterprise or agricultural activities or local residential property at surrounding landholdings over the short and/or long term.

Mitigation Measures for Material Assets

- Mitigation measures will be implemented to ensure that any potential impact of site based activities on local surface waters and groundwater underlying the application site (e.g. accidental oil or fuel spills) is minimised in order to safeguard and protect potential surface water and groundwater resources.
- Mitigation of the construction and operational stage impacts of the proposed development in respect of ecology, water, air quality, noise, ecology, cultural heritage and traffic detailed above - not considered that any additional mitigation measures are required in respect of infrastructure, utilities or sensitive receptors.

Potential Impact of the Proposed Development on Traffic and Transport

10.8.11. The potential impacts of the proposed development on **traffic and transport** are summarised as follows:

- Proposed development will generate no greater volume of HGV traffic and the characteristics of haulage vehicles will essentially be the same as the permitted quarry development on site – applicant has no objection to a similar condition limiting the daily number of loads to 150 trips per day.
- Inert landfill development is projected to have a lifespan of 8-17 years and is therefore likely to be completed before the current (2014) permission expires.
- Peak hour traffic is estimated to be in the order of 15 HGV trips – receiving road environment is neither heavily trafficked nor congested and the volume of traffic is unlikely to give rise to a concern at the junction with the main traffic route.
- Proposed development will result in a material change in established trip patterns – threshold and sub-threshold criteria for Traffic and Transport Assessment are met for the proposed haul route.
- Detailed modelling of the capacity of junctions not required - volume of traffic generation is not a concern with respect to capacity.
- Reasonable to expect that road improvement works along the L1157 should be substantially complete prior to commencement of construction works on site.
- Opening year daily traffic flow along the L1157 is forecast to be 392 vehicles per day (9% HGV) to the west of Ballinclare Quarry, and 791 (42% HGV) to the east. Corresponding figures for 2038 are 535 (12%) and 932 (39%) respectively.

Design capacity of rural undivided carriageway (5.5m wide) is estimated to be in excess of 1,000 vehicles per hour per direction.

- Current flows along the L1157 shows 30 cars and 5 HGVs in peak hours – permitted quarry gives rise to an additional 15 HGVs per hour in one direction thus increasing the hourly flow to 30 cars and 20 HGVs. Proposed development has the potential to increase hourly traffic flow to 30 cars and 35 HGVs. Total traffic flow on L1157 and proposed haul route is many multiples less than the theoretical capacity of the road – level of service and capacity of the L1157 is not considered likely to be significantly affected.
- Existing site access is lightly trafficked and will continue to be lightly trafficked in the context of the ultimate capacity of a simple priority junction.
- Other junctions along the haul route have significant capacity to cater for current and future traffic flows to and from the R772.
- Traffic flows along the R772 (N11) have reduced by more than 90% and junction of R772/ L1157 was improved in the same timeframe as the M11 works. Road structure and surface are in good order and the junction provides satisfactory sightlines.
- Operation of the C&D waste recovery facility will be discontinued once landfilling and restoration activities cease with no HGV traffic being generated thereafter.

<u>Mitigation Measures for Traffic and Transport</u>

- Significant road improvement works proposed along L1157 to accommodate 2-way traffic – includes carriageway widening, in-visible passing bay scheme, road strengthening, overlay and road markings.
- Design life of the proposed road improvements is 20 years, and save for routine maintenance, no additional mitigation measures are considered necessary during the operational stage of the proposed development.
- Much of the required site infrastructure, including vehicle washing systems, is already in place for maintaining the adjoining public roadway in a clean state.

Residual Effects and Conclusions for Material Assets

10.8.12. Material assets for the purposes of the proposed development includes the public road network and built services (telecoms, electricity and water networks). There are no other impacts associated with the proposed development on built services that cannot be mitigated to a non-significant level.

10.8.13. The proposed development will generate similar traffic volumes and characteristics to the permitted quarry development on site. The main difference between the permitted and proposed developments will be the haul route to the site. It is now proposed to access the site in a 2-way arrangement along the L1157 local road. Works will be required to upgrade this road to an appropriate standard, and it is considered that this can be implemented by way of condition.

10.8.14. It has been submitted by a number of observers that the applicant has insufficient legal interest to undertake improvement works to the L1157 and that statutory notices fail to reference these works. The applicant submits in response that strengthening and widening works are the categories of road improvement considered fundamental under the term 'maintenance' as defined in the Roads Act 1993. It is considered that these works will not significantly alter the character of the local road. The applicant does not propose to undertake development works in the public road and has no authority to do so without the issue of the appropriate licences; however, these works will be completed at applicant's expense. Utilisation of this road as the haul route will divert HGV traffic off the L1113 which would be the main access road to the arboretum and Ballynagran landfill.

10.8.15. Overall, I would be satisfied that subject to the proper implementation of all other relevant mitigation and best practice measures, the proposed development would not have any significant effect on material assets either individually or cumulatively with other projects or activities. I consider that the necessary roadworks should be completed before commencement of operations on site, and this can be implemented by way of condition.

10.9. Cultural Heritage and the Landscape

10.9.1. Chapters 12 and 13 of the EIAR describe the general characteristics with respect to cultural heritage and the landscape in the study area. Cultural heritage comprises

sites of archaeological, historical or architectural significance within the receiving environment. A detailed investigation of the archaeological and historical background of the application site, the landholding and the surrounding area extending 1km from the proposed development boundary was conducted for this purpose.

10.9.2. Landscape is the area perceived by people, both natural and cultural, and the current impact of land use, settlement and other human interventions. A landscape and visual assessment was carried out to include a description of the aspects of the development likely to cause landscape and/or visual effects, an assessment of landscape and visual receptor sensitivity, and the magnitude and significance of the landscape and visual effects. The study area of up to 3km surrounding the application site is included for this purpose which includes illustrative viewpoints.

10.9.3. The application site is within a 'corridor area' landscape category as defined within the landscape assessment of the Wicklow County Development Plan. Outdoor recreational facilities in the area include Kilmacurragh Botanic Gardens and a number of walking routes within Deputy's Pass Nature Reserve. The surrounding area comprises an undulating rural landscape with varied mix of agricultural fields, deciduous woodlands, scrub vegetation and forestry plantation.

10.9.4. Several recorded monuments were noted within the study area and there are two protected structures, Westaston Demesne Country House approximately 0.91km to the south-west, and Coolacork Country House approximately 0.96km to the north-east. There are no Recorded Monuments situated within the application site.

Characteristics of the Proposed Development

10.9.5. The proposed development will take place at the disused Ballinclare Quarry on a landholding of c. 36 hectares. The site area is given as 32.5 hectares which includes the quarry footprint, former concrete/ asphalt production area, a recently constructed paved concrete block yard, established site buildings and infrastructure, and a series of settlement ponds.

10.9.6. The proposed development would involve restoration of the existing quarry void across the application site. The long-term habitat over the site will be grassland / scrub.

Potential Impact of the Proposed Development

10.9.7. The potential impacts on **cultural heritage** are summarised as follows:

- No direct or indirect impacts on cultural heritage or archaeology.

Mitigation measures for Cultural Heritage

- Any soil-stripping associated with the proposed development should be archaeologically monitored.

Potential Impact of the Proposed Development

10.9.8. The potential impacts on **landscape** are summarised as follows:

- C& D recovery operations and soil washing plant will be well screened and are not considered to cause landscape effects.
- Potential landscape effects from changes to the landform within the existing quarry void due to the backfilling activities.
- Potential landscape effects from changes to the land use and therefore the appearance of the landfilling area from a mineral extraction use to a waste management use and finally to grassland / scrub habitat.
- Potential landscape effects from the introduction of the wetland treatment area and associated change of land use in the western part of the application site.
- Magnitude of landscape change on all landscape receptors is judged in the EIAR to be slight owing to the small changes to the composition of the landscape and its perceptual aspects, the limited area affected in the context of the large area surrounding the site of similar character, and the ultimately positive contribution of the development to the local landscape character.
- The sensitivity of the sense of naturalness and tranquillity was assessed as medium and the magnitude of landscape change was assessed as slight - in combination, the landscape effect is judged to be minor and this is not considered to be a significant landscape effect.
- Restored site including wetland will fully merge with the surrounding landscape - both the restored landfill area and the wetland treatment area will contribute to the sense of naturalness and tranquillity in the local area.

- Proposed development will be screened in most views within the study area during operational stage. No residential receptors or road users likely to take notice of changes from glimpse views from site entrance.
- Visual effects will be experienced only in views from within the two visual receptor groups (views from Kilmacurragh Botanic Gardens and some properties between 1-1.5km west and south-west, and properties (7 no.) 1km along the local road to the north of Westaston Hill).
- Landfilling and restoration activities above approximately the 70m contour in views from the south-western locations and above the 60m contour in views from the more western locations will be visible, during the operational stage of the development.
- Parts of the landfill area will become progressively visible as restored grassland / scrub during operational stage.
- The construction of the finished wetland treatment area will be fully screened by intervening topography and vegetation in the vast majority of views and the C&D material recovery and soil washing activities will be fully screened.
- Proposed development will be fully screened in views from the vast majority of locations within the Arboretum due to tree screening and topography.
- There will be no views of the proposed development from Deputy's Pass.
- Avoidance of the former haul route along the local roads to the north and west of Ballinclare Quarry has added advantage of avoiding cumulative impacts with HGVs accessing the Ballynagran Landfill and passing by a lower number of residential properties overall.
- VRG 1 - Views will be barely altered during the landfilling works and will be positively altered by the replacement of the visible quarry face with that of sloping grassland / scrub, matching that of the surrounding landscape.
- VRG 2 - Overall composition of the view will be barely altered during the landfilling works and will be positively altered by the replacement of the visible quarry face with that of sloping grassland / scrub, matching that of the surrounding landscape.

- Visual effect on residents / tourists within VRG 1 and VRG 2 is judged to be minor and that on road users as minor-negligible. Both are not considered to be significant visual effects.
- At post-operational stage, the restored site will fully merge with the surrounding landscape, and it will not be noticeable that extraction and landfilling activities have previously taken place, resulting in a fully positive visual effect.

Mitigation Measures for Landscape and Visual

- Design of proposed development includes containment of proposed development within existing quarry and retention of boundary vegetation, which reduces the visibility of the proposed development from surrounding roads and residential properties.
- No additional landscape / visual mitigation measures are considered necessary during the operational stage of the proposed development.
- Any lighting associated with the site facilities, including the C&D recovery area, will be directed downwards and inwards towards the site and will also only be used during operating hours.

Residual Effects and Conclusions on Cultural Heritage and the Landscape

10.9.9. Cultural heritage and the landscape are environmental factors with the potential to be changed by the proposed development. There are a number of 'Prospects of Special Amenity Value or Special Interest' within the study area, none of which will be affected by the proposed development. Most vegetation around the site will be retained and the restored landform will visually integrate into the surrounding landscape. There will be minor residual impacts on the landscape only.

10.9.10. There will be no direct or indirect impacts on archaeology and cultural heritage. Any soil-stripping associated with the proposed development should be archaeologically monitored.

10.9.11. Subject to the proper implementation of all other relevant mitigation and best practice measures, I would be satisfied that the proposed development would not have any significant effect on cultural heritage and the landscape, either individually or cumulatively with any other projects or activities.

10.10. Vulnerably of the Project to Major Accident and/ or Natural Disaster

10.10.1. The potential for unplanned events is examined in each chapter throughout the EIAR. It is considered that the vulnerability of the proposed development to accidents, unplanned events or natural disasters is relatively limited due to straightforward nature of the proposed development; the inert nature of the materials and the rural location; the proven capability of plant, equipment and technologies to be used; and well-established procedures to manage and control works.

10.10.2. Instability, spillage from vehicles and flooding are potential major accidents that could occur. Over-steep placement of imported soils and stones will be minimised by site management procedures. Any instability is likely to be localised and unlikely to have significant impacts. Risks arising from potential instability will be mitigated by annual geotechnical assessments of slope stability at the landfill and rock stability of the remaining quarry faces.

10.10.3. I am satisfied that given the nature of the proposed development, and the mitigation measures proposed, together with the low probability of a major accident/ natural disaster, it is not likely that significant effects on the environment would arise in this regard.

10.11. Cumulative Impacts & Environmental Interactions

10.11.1. Chapter 15 of the EIAR sets out the various interactions between the environmental factors insofar as the effect of one environmental factor causes an indirect effect on another environmental factor. Throughout the EIAR, the cumulative assessment of the proposed development is carried out along with the other projects and activities.

10.11.2. The main potential **cross factor** effects from the proposed development to population and human health arise from effects to land, soils and geology; water; air quality; noise and vibration; landscape and visual; and traffic. It has been established above that the proposed integrated inert waste management facility can proceed within acceptable levels for noise, dust and traffic effects. There are risks associated with the handling of contaminated wastes which could have implications for groundwater quality. However, the restored quarry will provide an increased thickness of soil and subsoil cover above the groundwater table, thereby reducing the potential risk of future groundwater contamination at the surface. The presence

of exposed, unvegetated soil surfaces could give rise to dust impacts. However, this will be mitigated by the progressive establishment of vegetation/ grass cover over the final landform.

10.11.3. The proposed development will potentially impact on local habitats and species through land alteration, dust and noise; however, the long-term the final restoration is likely to have a positive and beneficial effect on local biodiversity. The management of soils also has potential impacts on biodiversity, water quality, air quality and visual amenity. Impacts on water can have implications for human health, biodiversity, soils and geology and material assets (aquifers/ wells).

10.11.4. Mitigation measures are set out in each of the relevant chapters and can also be applicable to other environmental factors. Positive post-operational cross-factor effects to biodiversity, human health and landscape and visual will be experienced through the restored landform.

10.11.5. The **cumulative effects** of the proposed inert landfill and waste recovery facilities are assessed under each environmental factor. Wicklow County Council online planning search facilities shows that there have been no other planning permissions within the vicinity of the proposed development in the past five years. The Ballynagran landfill permission was extended to 2026 (Reg. Ref: 20/21). However, as noted in the EIAR, the environmental impacts for this facility are established and have been factored into baseline surveys.

10.11.6. It is considered in the EIAR that the only environmental factor that may give rise to cumulative effects is traffic. It is concluded in the Traffic Impact Assessment that the proposed development would not be likely to have an adverse cumulative impact on road capacity and traffic safety across the road network.

10.11.7. Overall, I would be satisfied with the methodology provided within the EIAR for cumulative assessment, which provides for a robust and complete assessment of the proposal by itself and any cumulative interactions with other aspects of the proposal.

10.12. Reasoned Conclusion

10.12.1. Having regard to the examination of environmental information contained above, and in particular to the EIAR and supplementary information provided by the applicant, and the submissions from Planning Authority, observers and prescribed bodies in the

course of the application, it is considered that the main significant direct and indirect effects of the proposed development on the environment are as follows:

- Positive impacts on **population and human health** on the local economy from medium term employment impacts and on amenity through improvements to local landscape character and views.

  Any adverse impacts on population and human health will be mitigated by the measures to reduce impacts from land, soils and geology, air & climate, noise & vibration and material assets to acceptable levels.

- Adverse impacts on **biodiversity** will not be avoided, managed and mitigated by the proposed measures contained within the EIAR. The site has not been adequately surveyed and therefore appropriate mitigation measures may not have been proposed with respect to impacts on water quality, habitat and species to minimise the impacts of the proposed development to a non-significant level.

- Positive impacts on **land** from its change from a disused quarry to some limited future land use potential in the form of grassland/ scrub habitat. Moderate positive impacts over the medium to long term on **soils** from the progressive re-establishment of soil as a growth medium and carbon sink on site.

- Potential for negative impacts on **water** by way of contamination from fuel leaks and from contaminants within imported soil and C&D materials. This will be adequately mitigated through appropriate site management practices and protocols to reduce risks of spills.

- Potential for negative impacts on **water** from the ongoing generation of leachate from rainfall on the landfill over the operational life. This will be adequately mitigated through an on-site (passive) wetland treatment system which can be enhanced by chemical dosing, aeration or other such processes if required.

- Potential negative impacts on **air** from the generation of dust and noise nuisance at nearby sensitive receptors. This will be adequately mitigated through implementation of effective site management practices.

- Potential for negative impacts on **material assets (traffic)** from the proposed development. The proposed development will generate similar traffic volumes and characteristics to the permitted quarry development on site. A two way

access arrangement along the L1157 is proposed which will require upgrade works. These upgrade works should be implemented before commencement of operations on site.

- Potential for positive impacts on **landscape** from changes to the appearance of the landfilling area to grassland / scrub habitat, which together with the wetland area, will fully merge with the surrounding landscape.

11.0 Appropriate Assessment

11.1. The areas addressed in this section are as follows:

- Compliance with Articles 6(3) of the EU Habitats Directive
- Geographical Scope and Main Characteristics
- Screening the need for Appropriate Assessment
- The Natura Impact Statement and associated documents
- Appropriate Assessment of implications of the proposed development on each European Site

11.2. **Compliance with Articles 6(3) of the EU Habitats Directive:** The Habitats Directive deals with the Conservation of Natural Habitats and of Wild Fauna and Flora throughout the European Union. Article 6(3) of this Directive requires that any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. The competent authority must be satisfied that the proposal will not adversely affect the integrity of the European site.

11.2.1. The proposed development comprising construction and operation of an inert landfill facility to backfill the existing quarry; progressive restoration of the backfilled quarry to long-term grassland / scrub habitat; development and operation of a construction and demolition (C&D) waste recovery facility; and installation and operation of a soil washing plant at Ballinclare and Carrigmore townlands, Kilbride, Co. Wicklow is not

directly connected with or necessary to the management of any European site and is therefore subject to the provisions of Article 6(3).

11.3. Geographical Scope and Main Characteristics

11.3.1. The proposed development is located at the site of Ballinclare Quarry in the townlands of Ballinclare and Carrigmore, Co. Wicklow. The site is between the Wicklow Mountains and the coast at a level below the 100m contour. The surrounding area comprises of lands principally occupied by agriculture with areas of natural vegetation, arable land and nearby forestry.

11.3.2. Potter's River is approximately 250m north and east of the proposed development site boundary. This river enters the Irish Sea approximately 10km downstream from the site. The river mouth is at the northern end of the Buckroney-Brittas Dunes and Fen SAC. The Ballinameesda Lower Stream is a tributary of the Potter's River located to the south of the site. The site is within the Ovoca-Vartry WFD catchment and the Potter's_010 WFD river sub basin. Groundwater mapping shows that the site and surrounding area is within a poorly productive bedrock. Deputy's Pass Nature Reserve SAC is located upsteam along the Potter's River approximately 2km from the nearest point of the proposed development site boundary.

11.3.3. The main characteristics of the proposed development are the backfilling of a quarry over an area of approximately 17.2 hectares with inert soil and stone waste to re-establish the landform that existed prior to quarrying (total intake capacity of 6,165,000 tonnes). The proposal also includes a construction and demolition (C&D) waste recovery facility and a soil washing plant. Existing infrastructure on site that will continue to be used includes the weighbridge office, wheel wash and weighbridge, staff welfare facilities, wastewater treatment system, garage/ workshop, storage tanks and hardstand areas. Any remaining fixed plant and infrastructure associated with the former quarry will be decommissioned.

11.3.4. An on-site (passive) wetland treatment system and attendant drainage infrastructure is proposed to treat surface water run-off/ groundwater collecting in the sump / quarry floor during landfilling operations and from the C&D waste recovery activities. Discharge from the treatment system will be to Potter's River. There will be no off-site discharges from the soil washing and aggregate recovery activities as all

process water will be recirculated. Temporary stockpiling of topsoil will take place on site for reuse as cover material and final restoration.

11.3.5. Dewatering of the quarry is expected to occur over a 4-5 month period at a pumping rate and required discharge of 1,728 m^3/ day (20 litres per second). On completion of initial dewatering operations, the rate of discharge will decrease to 860m^3/ day.

11.3.6. The backfilled quarry will be restored to agricultural grasslands and surface water will percolate to the backfilled soil mass or run-off to surface water channels carrying it to the wetland water treatment area. Surface water within a localised lower area in the south-eastern part of site will be collected at a swale and discharged to the Kilmacuragh Stream and ultimately to Potter's River.

11.4. Screening the need for Appropriate Assessment

11.4.1. The first test of Article 6(3) is to establish if the proposed development could result in likely significant effects to a European site. This is considered stage 1 of the appropriate assessment process i.e., *screening.* The screening stage is intended to be a preliminary examination. If the possibility of significant effects cannot be excluded on the basis of objective information, without extensive investigation or the application of mitigation, a plan or project should be considered to have a likely significant effect and Appropriate Assessment carried out.

11.4.2. Having regard to the information and submissions available, the nature, size and location of the proposed development and its likely direct, indirect and cumulative effects, the source pathway receptor principle and sensitivities of the ecological receptors, the European Sites set out in Table 1 below are considered relevant to include for the purposes of initial screening for the requirement for Stage 2 appropriate assessment on the basis of likely significant effects. A 15km study area from all elements of the proposed inert landfill and C&D waste recovery facility is applied for this purpose, wherein a total of 10 European Sites are included (7 SACs & 3 SPAs).

11.4.3. European sites considered for Stage 1 screening:

European site (SAC/SPA)	Site code	Distance to Proposed Development	Connections (source, pathway, receptor)	Considered further in Screening (Y/N)
Wicklow Mountains SAC	002122	11.9km	No potential connections	N
Wicklow Reef SAC	002274	9.6km	No potential connections	N
Deputy's Pass Nature Reserve SAC	000717	1.65km	No potential connections	N
The Murrough Wetlands SAC	002249	7.9km	No potential connections	N
Vale of Clara (Rathdrum Wood) SAC	000733	5.5km	No potential connections	N
Magherabeg Dunes SAC	001766	6.1km	No potential connections	N
Buckroney-Brittas Dunes and Fen SAC	000729	6.9km	Possible connections	Y
Wicklow Mountains SPA	004040	13km	No potential connections	N
Wicklow Head SPA	004127	8.3km	No potential connections	N
The Murrough SPA	004186	7.6km	No potential connections	N

Table 1 – Summary Table of European Sites considered in Screening for Appropriate Assessment

11.4.4. The applicants AA Screening Report concluded that there is potential for effects on the qualifying interests of the Buckroney-Brittas Dunes and Fen SAC via the discharge from the proposed development to Potter's River. The significance of the effects on the SAC is uncertain. Therefore, it is considered that the proposed development should progress to the second stage of the appropriate assessment process and the preparation of an NIS.

11.4.5. Having reviewed the documents, submissions and consultations with the NPWS, I am satisfied that the information allows for a complete examination and identification of any potential significant effects of the development, alone, or in combination with other plans and projects on European sites. Based on my examination of the AA Screening Report and other supporting information, the NPWS website, aerial and satellite imagery, the scale of the proposed development and likely effects,

separation distances and functional relationships between the proposed works and the European sites, their conservation objectives, and taken in conjunction with my assessment of the subject site and the surrounding area, I conclude that a Stage 2 Appropriate Assessment is required for the following European Site in view of the conservation objectives of that site:

- Buckroney-Brittas Dunes and Fen SAC (Site code: 000729)

11.4.6. Table 2 below provides a screening summary matrix where there is a possibility of significant effects from the proposed inert landfill and waste recovery facilities, or where the possibility of significant effects cannot be excluded without further detailed assessment.

Table 2 Screening summary matrix: European Sites for which there is a possibility of significant effects (or where the possibility of significant effects cannot be excluded without further detailed assessment)

Site name **Qualifying Interest feature**	**Is there a possibility of significant effects in view of the conservation objectives of the site?** **General impact categories presented**		
	Habitat loss/ modification	Water quality and water dependent habitats (pollution)	Disturbance/ displacement barrier effects
Buckroney-Brittas Dunes and Fen SAC *Qualifying Interests:* Annual vegetation of drift lines [1210] Perennial vegetation of stony banks [1220] Mediterranean salt meadows (Juncetalia maritimi) [1410] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] Atlantic decalcified fixed dunes (Calluno-Ulicetea) [2150] Dunes with Salix repens ssp. argentea (Salicion arenariae) [2170] Humid dune slacks [2190] Alkaline fens [7230]	No	Indirect effects to qualifying interest habitat of a SAC site via reductions in water quality	No

11.4.7. The remaining sites can be screened out from further assessment because of the scale of the proposed works, the nature of the Conservation Objectives, Qualifying and Special Conservation Interests, the separation distances and the lack of a substantive ecological linkage between the proposed works and the European sites.

11.4.8. There is no potential for the proposed inert landfill and waste recovery facilities to cause direct habitat loss, fragmentation or disturbance in any of the Special Areas of Conservation screened out within the study area due to the location of the works outside of any such European Sites. Indirect terrestrial or aquatic habitat loss or degradation will not occur in all sites screened out due to the absence of hydrological connectivity and the separation distance between construction works, or any operational stage work, at these sites. There is also no potential for indirect/ ex-situ disturbance or displacement of animal species as the qualifying interests in certain SACs relate to habitats/ plant species only.

11.4.9. The closest European Site to the proposed development site is Deputy's Pass Nature Reserve SAC and the only qualifying interest is "old sessile oak woods with Ilex and Blechnum in the British Isles". This site is located approximately 2km upsteam along the Potter's River and is therefore not hydrologically connected to the proposed development site.

11.4.10. With respect to the SPAs in the study area, there will be no direct habitat loss, habitat degradation or disturbance effect on any site. Indirect terrestrial or aquatic loss, reduction or degradation or disturbance effects to the Special Conservation Interests of the Wicklow Mountains SPA, Wicklow Head SPA and The Murrough SPA will not occur due to separation distances, the special conservation interest species and their range, the absence of hydrological connectivity or the large downstream distance and dilution factors.

11.4.11. It is therefore reasonable to conclude that on the basis of the information on the file, which I consider adequate in order to issue a screening determination, that the proposed development, individually or in combination with other plans or projects would not be likely to have a significant effect on Wicklow Mountains SAC (002122), Wicklow Reef SAC (002274), Deputy's Pass Nature Reserve SAC (000717), The Murrough Wetlands SAC (002249), Vale of Clara (Rathdrum Wood) SAC (000733), Magherabeg Dunes SAC (007166), Wicklow Mountains SPA (004040), Wicklow

Head SPA (004127) and The Murrough SPA (004186) in view of the sites' conservation objectives and a Stage 2 Appropriate Assessment for these sites is not therefore required. I am therefore satisfied that no additional sites other than that assessed in the NIS (Buckroney-Brittas Dunes and Fen SAC) need to be brought forward for Appropriate Assessment.

11.4.12. Having carried out Screening for Appropriate Assessment of the project, it has been concluded that the project individually, or in combination with other plans or projects, could have a significant effect on European Site No. 000729, in view of the site's Conservation Objectives, and Appropriate Assessment is therefore required.

11.5. The Natura Impact Statement and Associated Documents

11.5.1. The application was accompanied by an Appropriate Assessment Screening Report and Natura Impact Statement dated 1st April 2021 and submitted to the Board on 20th April 2021. The NIS examines the effects of the proposed quarry restoration through import of inert waste and development of C&D waste recovery facilities alone, and in-combination with other projects and activities, on the integrity of the European Site in respect of its conservation objectives and its structure and function.

11.5.2. In general, I am satisfied that the Appropriate Assessment Screening Report and Natura Impact Statement submitted with the planning application adequately describes the proposed development, the project site and the surrounding area. The Stage 1 Screening Assessment concluded that a Stage 2 Appropriate Assessment (NIS) was required. The Appropriate Assessment Screening Report and NIS outlined the methodology used for assessing potential impacts on the habitats and species within the European Sites that have the potential to be affected by the proposed development. It predicted the potential impacts for the site and its conservation objectives, suggested mitigation measures, assessed in-combination effects and identified any residual effects on the European site and its conservation objectives.

11.5.3. The Appropriate Assessment Screening Report and NIS were informed by the following studies, surveys and consultations:

- Desk study to collate information on Natura 200 sites within potential zone of influence.

- Review of EPA maps, Wicklow County Council planning portal for information on other plans and projects, and NPWS website for information on Natura 2000 sites.
- CIEEM (2018) – Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.
- SLR Consulting Limited – Ballinclare Inert Landfill Ecological Impact Assessment Report, Chapter 10 (August 2020).
- Farm AM (1993) – The Effects of Dust on Vegetation – A Review (Environmental Pollution Vol.79, Issue 1).
- Holman et al (2014) – IAQM Guidance on the Assessment of Dust from Demolition and Construction (Institute of Air Quality Management, London).
- Doherty Environmental (2017) – Screening Statement in Support of Appropriate Assessment for a Proposed Section 4 Temporary Surface Water Discharge from Ballinclare Quarry to Potters River, Co. Wicklow.
- DoEHLG (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government. Dublin. European Commission (2001).
- Assessment of Plans and Projects significantly affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC.
- European Commission (2018) - Managing Natura 2000 Sites: The Provisions of Article 6 of the 'Habitats Directive' 92/43/EEC.
- European Union Habitats Directive (1992). Council Directives 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.
- Kettunen, M, Terry, A., Tucker, G. & Jones A. (2007). Guidance on the maintenance of landscape features of major importance for wild flora and fauna - Guidance on the implementation of Article 3 of the Birds Directive

(79/409/EEC) and Article 10 of the Habitats Directive (92/43/EEC). Institute for European Environmental Policy (IEEP), Brussels, 114 pp. & Annexes.

- NPWS (2013). Buckroney-Brittas Dunes and Fen SAC 000729. Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs
- NPWS (2017) Conservation Objectives: Buckroney-Brittas Dunes and Fen SAC 000729. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.
- Scott Wilson and Levett-Therivel, (2006). Appropriate Assessment of Plans. Scott Wilson, Levett-Therivel Sustainability Consultants, Treweek Environmental Consultants and Land Use Consultants

11.5.4. The NIS concluded that the mitigation measures, if fully implemented, are considered to be sufficient to prevent any effect on the qualifying interests of Buckroney-Brittas Dunes and Fen SAC. It is also submitted that the competent authority has sufficient information to allow it to determine that the proposed development, individually or in-combination with other plans or projects, will not have an adverse effect of the integrity of the Buckroney-Brittas Dunes and Fen SAC.

11.5.5. Having reviewed the NIS and the supporting documentation, I am satisfied that it provides adequate information in respect of the baseline conditions, clearly identifies the potential impacts, and uses best scientific information and knowledge. Details of mitigation measures are provided, and they are summarised in the NIS. I am satisfied that the information allows for a complete assessment of any adverse effects of the development, on the conservation objectives of the following European sites alone, or in combination with other plans and projects:

- Buckroney-Brittas Dunes and Fen SAC (Site code: 000729)

11.6. Appropriate Assessment of implications of the proposed development on each European Site

11.6.1. The following is an assessment of the implications of the project on the relevant conservation objectives of the European sites using the best available scientific knowledge in the field. All aspects of the project which could result in significant

effects are identified and mitigation measures designed to avoid or reduce any adverse effects are examined and assessed.

11.6.2. I have relied on the following guidance:

- DoEHLG (2009). Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities. Department of the Environment, Heritage and Local Government, National Parks and Wildlife Service.
- EC (2002) Assessment of plans and projects significantly affecting Natura 2000 sites. Methodological guidance on the provisions of Article 6(3) and 6(4) of the Habitats Directive 92/43/EC
- EC (2018) Managing Natura 2000 sites. The provisions of Article 6 of the Habitats Directive 92/43/EEC
- EC (2011) Guidelines on the implementation of the Birds and Habitats Directives in Estuaries and coastal zones

11.6.3. **Relevant European Site:** The following site is subject to appropriate assessment.

- Buckroney-Brittas Dunes and Fen SAC (Site code: 000729)

11.6.4. A description of this site and its Conservation Objectives and Qualifying Interests, including any relevant attributes and targets for the site, is set out in the NIS and outlined in Table 3 below. I have also examined the Natura 2000 data forms as relevant and the Conservation Objectives supporting documents for this site available through the NPWS website (www.npws.ie).

11.6.5. **Aspects of the proposed development:** The main aspects of the proposed development that could adversely affect the conservation objectives of European sites include:

- Impacts to water quality through quarry void dewatering related pollution events.
- Impacts to water quality from pollution events during the operational stage of the waste management facility (landfill and waste recovery activities).

11.6.6. **Tables 3** summarises the appropriate assessment and site integrity test. The conservation objectives, targets and attributes as relevant to the identified potential significant effects are examined and assessed in relation to the aspects of the

proposal (alone and in combination with other plans and projects). Mitigation measures are examined, and clear, precise and definitive conclusions reached in terms of adverse effects on the integrity of European sites.

11.6.7. Supplemental to the summary tables, key issues that arose through consultation and through my examination and assessment of the NIS and further information request are expanded upon in the text below.

Table 3

Buckroney-Brittas Dunes and Fen SAC (Site code: 000729)

Key Issues:

- **Habitat modification/ deterioration**
- **Deterioration of water quality and water dependant habitats**

Conservation Objectives: https://www.npws.ie/sites/default/files/protected-sites/conservation_objectives/CO000729.pdf

		Summary of Appropriate Assessment			
Conservation Objective	Targets & Attributes (as relevant)	Potential adverse effects	Mitigation Measures	In-combination effects	Can adverse effects on site integrity be excluded?
To maintain the favourable conservation condition of the following:	**The favourable conservation status of a species is achieved when:**				
Annual vegetation of drift lines [1210]	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate physical structure (functionality and sediment supply); maintain range of coastal habitat; maintain presence of species-poor communities with typical species; and appropriate levels of negative indicator species.	Potential for untreated discharge of licensed trade effluent containing naturally occurring heavy metals from ground water sources arising from dewatering of quarry void. Discharge of water during the operation of the waste	Construction of an on-site wastewater treatment wetland to remediate water by reducing the load of heavy metals and other naturally occurring pollutants present in discharged water prior to discharge to Potters River. Designated person responsible for	Wicklow County Council planning portal accessed for information on other projects and plans. Effects on the integrity of Buckroney-Brittas Dunes SAC are not expected to occur as a result of the project and, as such, there are no pathways for the	Yes Qualifying interests fixed dune habitats are terrestrial and are not fed or dependent upon flows or water from Potters River – integrity of these habitats will not be affected by any potential changes in
Mediterranean salt meadows (Juncetalia maritime)	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate physical				

	structure (sediment supply); maintain creek and pan structure; maintain natural tidal regime; maintain range of coastal habitat; maintain structural variation in sward; maintain more than 90% of the area outside of creeks vegetated; maintain range of sub-communities with typical species; and prevention of common cordgrass.	management facility (landfill and waste recovery activities) resulting in the potential for impacts of this discharge on Potter's River. Hydrological assessment indicated that groundwater collecting in the quarry void contained elevated levels of dissolved arsenic, mercury and phosphate compared to water in Potter's River. Risk that surface water could be impacted by being in contact with the soil/ C&D waste or flowing through it.	implementation of all environmental protective measures during construction. Contractor to provide briefing on environmental protection measures/ ecological sensitivities and will ensure that mitigation measures set out in CEMP and any site specific method statements are fully and correctly implemented. Operator will be responsible for managing and operating the development in line with the requirements of the planning and waste licence conditions. Names of persons responsible for implementation and supervision of mitigation measures during all phases of development will be clearly identified and set out in CEMP and Operational Environmental Plan. Within scheme design and operation, good practice environmental	proposed development to act in-combination with other plans or projects.	the river's water chemistry. Section of the Potters River in SAC is tidal and is therefore influenced by the sea and saline water. Pollution and hydrological changes to the Potter's River are not considered to present risks to the dune and fen habitats of the SAC. There will be no change to the characteristics of and quantity of discharge to Potter's River over that which is currently permitted (Reg. Ref: 14/2118) – proposed development will not affect the qualifying interests of the SAC regardless if they are terrestrial or water-dependent habitat. Existing discharge licence dictates the quality of the surface water to be
Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate physical structure (functionality and sediment supply); maintain range of coastal habitat; appropriate bare ground; maintain range of sub-communities with typical species; maintain structural variation in sward; appropriate levels of negative indicator species; and appropriate levels of scrub/ trees.				
Dunes with Salix repens ssp. Argentea (Salicion arenariae) [2170]	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate physical structure (functionality and sediment supply); maintain range of coastal habitat; appropriate bare ground; maintain range of sub-communities with typical species; maintain structural variation in sward; appropriate				

	levels of creeping willow and negative indicator species; and appropriate levels of scrub/ trees.		pollution and control measures will be employed with regard to relevant good practice guidance (CRIRA and IFI). Enhancement of effectiveness of wetland treatment system by temporary addition of various, more active treatment systems, such as chemical dosing, aeration or other such processes – allows wetland system to handle higher contaminant loads or flows for periods of time should leachate generation rates and chemical constituents change over time. Siltbuster treatment system will treat naturally elevated levels of arsenic in the water collecting in the quarry void and remove suspended solids. Treatment system will remain in service for duration of dewatering and also for the subsequent C&D landfilling / waste recovery operations (at which time it will be		discharged to the Potters River during dewatering - there will be no change to the permitted volume of discharge to Potters River or to the hydrological conditions flowing downstream to the fen habitat / SAC.
Alkaline fens [7230]	Stable/ increasing habitat area; no decline in habitat distribution; maintain soil nutrient status; maintain active peat formation, natural hydrological regimes and appropriate water quality; maintain variety of vegetation communities; appropriate vegetation composition for positive indicator species (brown mosses, vascular plants), negative indicator species, non-native species, native trees and scrubs and soft rush and common reed cover; appropriate vegetation structure in terms of height, disturbed bare ground, drainage and tufa formations; and no decline in distribution or population sizes of rare, threatened or scarce species associated with the habitat.				
To restore the favourable conservation condition of the following:					
Perennial vegetation of stoney banks [1220]	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate physical structure (functionality and sediment supply); maintain				

	range of coastal habitat; maintain typical vegetation shingle flora; and appropriate levels of negative indicator species.		supplemented by the proposed wetland treatment system). Wetland processes will be required in the following process train: anaerobic wetland (mainly for precipitation of metals and sulphate precipitation) otherwise called a biochemical reactor (BCR) followed by an iron sequestering unit (ISU) to assist with sulphate removal followed by an aerobic polishing wetland (APW) for removal of barium, chromium and organic substances. Leachate can be tankered from the site and wetlands can be actively aerated to increase treatment efficiency by installation of a blower and diffuser system. Anaerobic wetland elements can also be enhanced by dosing of small amounts of methanol to the influent as can the performance of iron sequestering unit by the addition of iron. EPA will continue to have an oversight and		
Embryonic shifting dunes [2110]	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate physical structure (functionality and sediment supply); maintain range of coastal habitat; maintain healthy sand couch grass and/ or lyme-grass; maintain presence of species-poor communities with typical species; and appropriate levels of negative indicator species.				
Shifting dunes along the shoreline with Ammophila arenaria (white dunes) [2120]	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate physical structure (functionality and sediment supply); maintain range of coastal habitat; maintain healthy marram grass and/ or lyme-grass; maintain presence of species-poor communities dominated by marram grass; and appropriate levels of negative indicator species.				
Atlantic decalcified fixed dunes [2150]	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate physical structure (functionality and sediment supply); maintain range of coastal habitat; appropriate bare ground;				

	maintain range of sub-communities with typical species; maintain structural variation in sward; appropriate levels of negative indicator species; and appropriate levels of scrub/ trees.		enforcement role post-closure and will have the necessary powers to independently monitor environmental performance, direct environmental control activities and enforce environmental compliance until such time as the waste licence is surrendered. Mitigation system to be maintained and implemented by Kilsaran Concrete, or subsequent occupiers of the site should ownership be transferred.		
Humid dune slacks [2190]	Stable/ increasing habitat area; no decline in habitat distribution; maintain appropriate physical structure (functionality and sediment supply); maintain hydrological regime; maintain range of coastal habitat; appropriate bare ground; maintain range of sub-communities with typical species; maintain structural variation in sward; appropriate levels of creeping willow and negative indicator species; and appropriate levels of scrub/ trees.				
Overall Conclusion: Integrity test Following the implementation of mitigation, the construction and operation of this proposed development will not adversely affect the integrity of the Buckroney-Brittas Dunes and Fen SAC in view of the site's conservation objectives. No reasonable scientific doubt remains as to the absence of such effects.					

Relevant European site: Buckroney-Brittas Dunes and Fen SAC (Site code: 000729)

11.6.8. According to the site synopsis, the Buckroney-Brittas Dunes and Fen SAC is a complex of coastal habitat comprising two main sand dune systems, Brittas Bay and Buckroney Dunes, that are connected by the rocky headland of Mizen Head. Buckroney Fen has developed from the dunes cutting off a small river at Mizen Head.

11.6.9. It is noted that the northern end of the Brittas system has fine examples of parabolic dunes. Overall, the SAC is important as an extensive sand dune/fen system with well developed plant communities. Fixed dune and decalcified dune heath are present and these habitats are listed with priority status in the EU Habitats Directive. Rich flora and fauna persists on the SAC despite extensive amenity use and adjacent farming but future land use practices will need to be managed.

Factors that can adversely affect the achievement of conservation objectives

11.6.10. The proposed inert landfill and C&D waste recovery facility at Ballinclare Quarry is located approximately 6.8km north-west of the Buckroney-Brittas Dunes and Fen SAC. There are potential impact pathways from the proposed development site via the Potter's River. The proposed wetland treatment area will discharge to the Ballinclare Stream and the discharge route will continue along this stream for approximately 400m to Potters River. The Buckroney-Brittas Dunes and Fen SAC is approximately 11.5km downstream of the confluence of the Ballinclare Stream and Potters River.

11.6.11. The conservation objectives for the Buckroney-Brittas Dunes and Fen SAC includes the maintenance of the favourable conservation condition of Annual vegetation of drift lines, Mediterranean salt meadows (Juncetalia maritime), Fixed coastal dunes with herbaceous vegetation (grey dunes), Dunes with Salix repens ssp. Argentea (Salicion arenariae), and Alkaline fens. It is also the conservation objective to restore the favourable conservation condition of Perennial vegetation of stoney banks, Embryonic shifting dunes, Shifting dunes along the shoreline with Ammophila arenaria (white dunes), Atlantic decalcified fixed dunes, and Humid dune slacks.

11.6.12. The favourable conservation status of a habitat is achieved when its natural range, and area it covers within that range, are stable or increasing; the specific structure

and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future; and the conservation status of its typical species is favourable.

11.6.13. There may be factors arising from the proposed development, in-combination with other plan/ projects, that can adversely affect the achievement of the conservation objectives for which the Buckroney-Brittas Dunes and Fen SAC is designated. The potential for hydrological connection affecting the QI of the SAC exists and potential sources of impact from the proposed development may occur from quarry dewatering and operational activities. Untreated trade effluent containing heavy metals from groundwater sources and discharge of water during the operation of the waste management facility could impact on Potter's River which flows into the SAC 11.5 river kilometres downstream. A hydrological assessment indicated that groundwater collecting in the quarry void contained elevated levels of dissolved arsenic, mercury and phosphate compared to was in Potters River. There is also the risk that surface water could be in contact with the landfill and waste recovery activities on site.

11.6.14. The existing water management system on site will be upgraded through the construction of an on-site 3.8 ha (passive) wetland treatment system. This system will treat surface water run-off / groundwater collecting in the quarry floor during backfilling / landfilling operations, as well as surface water run-off from the C&D waste recovery area prior to its discharge off-site at Ballinclare Stream.

11.6.15. The wetland treatment system will remove suspended solids and naturally high levels of arsenic and phosphate present in dewatered groundwater, and any suspended solids or contaminants from surface water drainage. The wetland treatment system can be enhanced by temporary addition of chemical dosing, aeration and other processes to handle higher contaminant loads or flows. The process train will include an anaerobic wetland (mainly for precipitation of metals and sulphate precipitation) otherwise called a biochemical reactor (BCR), followed by an iron sequestering unit (ISU) to assist with sulphate removal, followed by an aerobic polishing wetland (APW) for removal of barium, chromium and organic substances. A Siltbuster treatment system will treat naturally elevated levels of arsenic and leachate can be tankered from the site.

11.6.16. The targets and attributes for each of the qualifying interests that potentially could be adversely affected by the proposed development are set out in Table 3 above. At its confluence with the Irish Sea, Potters River passes through an area of the SAC that is predominately fixed coastal dunes. Fossitt (2000) describes Fixed Dunes (CD3) as *"stabilised ridges or hills of sand with a more or less complete cover of vegetation, and where humus has accumulated in the soil. Species composition is highly variable but vegetation is usually characterised by herb-rich grassland or heath communities. Fixed dunes also include consolidated and flattened dune areas that typically occur behind the main dune ridges. As these flat sandy areas are frequently used for agriculture, grassland communities may contain 'agricultural' herbs".*

11.6.17. The qualifying interests fixed dune habitat are not fed by or dependent upon flows or water from Potters River. The section of the Potters River in the SAC is tidal and is influenced by the sea and saline water. There are no sources of impact associated with any pollution or hydrological changes to Potters River that could adversely affect the maintenance or restoration of the favourable conservation condition of any of the habitats and species for which the Buckroney-Brittas Dunes and Fen SAC is designated. Notwithstanding this, the above mitigation measures will ensure that the proposed development will not significantly impact on the maintenance of hydrological conditions in Potters River.

11.6.18. Having regard to the above, I would be satisfied that notwithstanding the full and proper implementation of mitigation measures, the proposed development will not cause changes to the key indicators of conservation value, in particular water flows and quality, and thus there is no potential for adverse impacts on the integrity of the Buckroney-Brittas Dunes and Fen SAC.

11.6.19. Following the appropriate assessment and the consideration of mitigation measures, I am able to ascertain with confidence that the project would not adversely affect the integrity of Buckroney-Brittas Dunes and Fen SAC in view of the Conservation Objectives of this site. This conclusion has been based on a complete assessment of all implications of the project alone and in combination with plans and projects.

11.7. In-Combination Effects

11.7.1. The NIS accompanying the planning application evaluates the in-combination impacts of the proposed inert landfill and waste recovery facilities with other plans/ projects. Wicklow County Council planning portal was accessed for this purpose. It should be noted that the most relevant planning application for in-combination assessment was the proposal on lands to the north of the proposed development site for the importation and deposition of inert subsoil and topsoil for land profiling and recontouring purposes including all ancillary site works at an existing agricultural holding of 7.53 hectares. This application was refused permission by the Board in December 2018 (ABP-301135-18). There is another quarry at Kilmacurra West on the opposite side of the L1157 Local Road to the south of the proposed development site. It is understood that this quarry is not currently active.

11.7.2. The NIS concludes that effects on the integrity of Buckroney-Brittas Dunes and Fen SAC are not expected to occur as a result of the project and, as such, there are no pathways for the proposed design amendments to act in-combination with other plans and projects. This analysis was complete and robust in terms of plans and projects and no likely significant impacts arose taking into account any residual impacts from the proposed development. Based on my analysis of the NIS, the response document and NPWS data and scientific evidence provided, adverse effects to the integrity of Buckroney-Brittas Dunes and Fen SAC will not arise.

11.7.3. The potential for adverse effects due to in-combination effects with other projects and activities was excluded based on the following:

- The proposed inert landfill and waste recovery facilities themselves will not lead to adverse impacts on the Qualifying Interests of the Buckroney-Brittas Dunes and Fen SAC and therefore in-combination impacts will not arise.
- Waste licence and permit applications for the facility will themselves be subject to Appropriate Assessment as necessary.
- There are no other planned or ongoing projects in the immediate vicinity of the proposed development site that could act in combination with the proposed development to have adverse effects on the integrity of a European Site.

11.8. Appropriate Assessment Conclusions

11.8.1. Having carried out screening for appropriate assessment of the proposed inert landfill and waste recovery facilities, it was concluded that it may result in significant effects on Buckroney-Brittas Dunes and Fen SAC. Consequently, an appropriate assessment was required of the implications of the project on the qualifying features of this site in light of its conservation objectives.

11.8.2. Following an appropriate assessment, it has been ascertained that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of Buckroney-Brittas Dunes and Fen SAC or any other European site, in view of the site's Conservation Objectives. No reasonable scientific doubt remains as to the absence of such effects.

11.8.3. This conclusion is based on:

- A full and detailed assessment of all aspects of the proposed project including proposed mitigation measures and ecological monitoring in relation to the Conservation Objectives of Buckroney-Brittas Dunes and Fen SAC,
- Detailed assessment of in combination effects with other plans and projects including historical projects, current proposals and future plans,
- No reasonable scientific doubt as to the absence of adverse effects on the integrity of Buckroney-Brittas Dunes and Fen SAC.

12.0 Overall Conclusion

12.1. The proposed inert landfill and construction and demolition waste recovery facility is an appropriate form of development for a disused quarry where infrastructure is in place and where there is a pre-existing and established use that gives rise to similar impacts. There is an active permission for the quarry, but extraction has ceased due to the presence of naturally occurring asbestos in the rock. The quarry is to be dewatered under the terms of the existing waste permit and the applicant will apply for a waste licence for the proposed development, including new passive wetland treatment system.

12.2. The proposed development allows for compliance with circular economy principles set out in national and regional policy by recycling construction and demolition wastes; recovering sand, gravel and secondary aggregates from soil waste; and by returning the site into some sort of active use over time through progressive re-establishment of soil as a growth medium and carbon sink on site.

12.3. It has been concluded within the Appropriate Assessment that the proposed development, individually or in combination with other plans or projects would not adversely affect the integrity of Buckroney-Brittas Dunes and Fen SAC or any other European site, in view of the site's Conservation Objectives. It has been established that there are no sources of impact associated with any pollution or hydrological changes to Potters River that could adversely affect the maintenance or restoration of the favourable conservation condition of any of the habitats and species for which the Buckroney-Brittas Dunes and Fen SAC is designated.

12.4. An EIA has been carried out for the proposed development with positive findings in terms of employment and amenity improvements for the local population and the change from a disused quarry to some future land use potential. There will also be positive impacts in terms of visual appearance from a landfilling area to grassland / scrub habitat, which together with the wetland area, will fully merge with the surrounding landscape.

12.5. Adverse impacts on population and human health from noise and dust, noise and traffic can be mitigated to acceptable levels and appropriate site management measures will be put in place to deal with the potential for negative impacts on water by way of contamination and ongoing generation of leachate. Notwithstanding this, discharges from the site will ultimately be controlled by way of EPA licence.

12.6. It has been concluded that adverse impacts on biodiversity will not be avoided, managed and mitigated by the proposed measures contained within the EIAR. The site has not been adequately surveyed and therefore appropriate mitigation measures may not have been proposed with respect to impacts on water quality, habitat and species to minimise the impacts of the proposed development to a non-significant level.

13.0 **Recommendation**

13.1. On the basis of the above assessment, I recommend that the Board should **refuse** permission for the proposed development for the reasons and considerations set out below.

14.0 **Reasons and Considerations**

It is considered that the proposed development would be in accordance with European waste policy, the National Planning Framework and the current Wicklow County Development Plan in terms of its positive contribution to Ireland's national strategic policy on sustainable waste management and its move to a circular economy. However, having regard to the previous use of the site for quarrying and to the lack of survey information submitted with the application regarding the existing environmental and ecological status of the subject site and surroundings, the Board is not satisfied, on the basis of the submissions made in connection with the planning application, that adverse impacts on water quality, habitat and species can be avoided, managed and mitigated to non-significant levels. The proposed development would have unacceptable direct and indirect impacts on biodiversity and would, therefore, be contrary to the proper planning and sustainable development of the area.

Donal Donnelly
Senior Planning Inspector

8th September 2022