



ElAR Non-Technical Summary

Materials Recovery / Recycling Facility and Inert Landfill

Kilsaran Concrete Unlimited Company

Ballinclare Quarry, Kilbride, Co. Wicklow

Prepared by:

SLR Environmental Consulting (Ireland) Ltd

7 Dundrum Business Park, Windy Arbour, Dublin, D14 N2Y7

SLR Project No. : 501.00036.065366

8 November 2024

Revision: V1.0

Revision Record

| Revision | Date | Prepared By | Checked By | Authorised By |
|----------|------------------------|-------------|------------|---------------|
| 0.1 | 30 October 2024 | LH | DL | |
| 1.0 | 9 November 2024 | LH | DL | DL |
| | Click to enter a date. | | | |
| | Click to enter a date. | | | |
| | Click to enter a date. | | | |

Basis of Report

This document has been prepared by SLR Environmental Consulting (Ireland) Ltd (SLR) with reasonable skill, care and diligence, and taking account of the timescales and resources devoted to it by agreement with Kilsaran Concrete Unlimited Company(the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

SLR shall not be liable for the use of or reliance on any information, advice, recommendations and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only in the event that SLR and the third party have executed a reliance agreement or collateral warranty.

Information reported herein may be based on the interpretation of public domain data collected by SLR, and/or information supplied by the Client and/or its other advisors and associates. These data have been accepted in good faith as being accurate and valid.

The copyright and intellectual property in all drawings, reports, specifications, bills of quantities, calculations and other information set out in this report remain vested in SLR unless the terms of appointment state otherwise.

This document may contain information of a specialised and/or highly technical nature and the Client is advised to seek clarification on any elements which may be unclear to it.

Information, advice, recommendations and opinions in this document should only be relied upon in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment.



Table of Contents

| | |
|--|--------------|
| 1.0 INTRODUCTION..... | NTS-1 |
| 1.1 Development Overview | NTS-1 |
| 1.2 The Applicant | NTS-4 |
| 1.3 Application Site | NTS-4 |
| 1.4 Background to Proposed Development | NTS-5 |
| 1.5 Site Access | NTS-5 |
| 1.6 Site Drainage | NTS-6 |
| 1.7 Surrounding Land Use..... | NTS-6 |
| 1.8 Alternatives | NTS-7 |
| 2.0 DESCRIPTION OF THE DEVELOPMENT | NTS-9 |
| 2.1 Overview | NTS-9 |
| 2.2 Site Infrastructure | NTS-10 |
| 2.2.1 Soil Washing / Aggregate Recovery Plant..... | NTS-10 |
| 2.2.2 Proposed C&D Waste Recovery Shed..... | NTS-10 |
| 2.3 Site Access | NTS-11 |
| 2.4 Rate of Importation..... | NTS-12 |
| 2.5 Site Preparation Works..... | NTS-12 |
| 2.6 Landfill Design..... | NTS-13 |
| 2.7 Water Management..... | NTS-14 |
| 2.7.1 Quarry Dewatering | NTS-14 |
| 2.7.2 Water from Landfilled Areas..... | NTS-14 |
| 2.7.3 Water from Non-Landfill Areas | NTS-15 |
| 2.7.4 Control of Uplift Pressures..... | NTS-15 |
| 2.7.5 Water Treatment | NTS-15 |
| 2.8 Waste Activities and Procedures | NTS-17 |
| 2.8.1 Waste Intake | NTS-17 |
| 2.8.2 Phasing of Landfilling Works | NTS-18 |
| 2.8.3 Processing and Recovery of C&D Wastes | NTS-19 |
| 2.8.4 Soil Washing Activities | NTS-20 |
| 2.8.5 Duration of Activities..... | NTS-20 |
| 2.8.6 Working Hours..... | NTS-20 |
| 2.8.7 Employment | NTS-21 |
| 2.8.8 Environmental Controls and Monitoring | NTS-21 |
| 2.9 Post Closure Restoration and Aftercare | NTS-21 |
| 2.9.1 Inert Landfill Facility..... | NTS-21 |
| 2.9.2 C&D Waste Recovery Facility | NTS-22 |



| | | |
|------------|---|---------------|
| 3.0 | EXISTING ENVIRONMENT, EFFECTS & MITIGATION | NTS-24 |
| 3.1 | Population and Human Health..... | NTS-24 |
| 3.2 | Biodiversity..... | NTS-25 |
| 3.3 | Land, Soils and Geology | NTS-26 |
| 3.4 | Water | NTS-28 |
| 3.5 | Air Quality..... | NTS-30 |
| 3.6 | Climate..... | NTS-32 |
| 3.7 | Noise..... | NTS-32 |
| 3.8 | Material Assets..... | NTS-33 |
| 3.9 | Cultural Heritage | NTS-34 |
| 3.10 | Landscape..... | NTS-34 |
| 3.11 | Traffic..... | NTS-35 |
| 3.11.1 | Haul Route | NTS-36 |
| 3.11.2 | Baseline..... | NTS-38 |
| 3.11.3 | Reception Infrastructure | NTS-38 |
| 3.11.4 | Haul Route Condition | NTS-39 |
| 3.11.5 | Traffic Effects | NTS-39 |
| 3.11.6 | Mitigation Measures - Road Improvement..... | NTS-41 |
| 3.11.7 | Mitigation Measures – Traffic Management..... | NTS-42 |
| 3.12 | Interaction of the Foregoing..... | NTS-42 |
| 3.13 | Mitigation and Monitoring Commitments..... | NTS-42 |

Figures in Text

| | |
|---------------|--|
| Figure NTS-1 | Site Location Map |
| Figure NTS-2 | Site Location Plan |
| Figure NTS-3 | Existing Site Layout |
| Figure NTS-4 | Surrounding Land Use |
| Figure NTS-5 | Proposed Initial Site Layout during Operational Phase 1A |
| Figure NTS-6 | Landfill Cross Sections |
| Figure NTS-7 | Final Restoration and Landscaping Plan |
| Figure NTS-8 | Landfilling Phase 2 |
| Figure NTS-9 | Landfilling Phase 3 |
| Figure NTS-10 | Environmental Monitoring Locations |



1.0 INTRODUCTION

1.1 Development Overview

This Environmental Impact Assessment Report (EIAR) Non-Technical Summary has been prepared in support of Application for Strategic Infrastructure Development to An Bord Pleanála and a Waste Licence Application to the Environmental Protection Agency (EPA) by Kilsaran Concrete Unlimited Company (hereinafter 'Kilsaran').

The proposed development located at Ballinclare Quarry, near Kilbride, Co. Wicklow, provides for the establishment and operation of a licensed, integrated material recovery / recycling facility and inert landfill which comprises three key elements:

- a soil washing plant to win aggregate from imported soil and stone;
- a construction and demolition (C&D) waste recycling facility to produce aggregate from construction and demolition waste (principally concrete); and
- an inert engineered (i.e. lined) landfill to facilitate backfilling and restoration of the existing quarry void.

The principal intake material at the proposed facility will be excess soil and stone generated by off-site construction and development activities in Counties Wicklow, Dublin and Wexford. The imported soil and stone will comprise a mix of:

- (non-waste) by-product, typically originating at previously undeveloped ('greenfield') sites; and
- waste, typically originating from previously developed '(brownfield') sites.

The proposed soil wash plant will be set up and operated at the former concrete / asphalt production yard in the south-eastern corner of the application site. This plant will principally recover sand and gravel and recycled (secondary) aggregates from more granular soil intake and claybound C&D materials. Aggregates will be won from imported non-waste by-product as well as from inert waste materials. Soil washing activities will continue in operation up to the final phase of proposed landfilling across the former concrete / asphalt production area.

The proposed construction and demolition (C&D) waste recovery facility will be set up and operated across the existing paved area to the west of the existing site access road. The principal wastes to be recycled at this facility will include concrete (ready-mixed, reinforced, blocks and/or pavement slabs), bricks and bituminous mixtures (hardened asphalt returns and road planings). These materials will be processed (crushed and screened) to produce recycled (secondary) aggregates.

All aggregates from waste will be of construction grade and will comply with an engineering specification and the End of Waste criteria for recycled aggregates recently published by the EPA.

It is proposed to backfill the existing quarry to original / surrounding ground level by importing and placing inert waste, principally soil and stone, in a lined landfill facility and in so doing, substantially re-establish the original landform which existed prior to quarrying. The landfilling and restoration activities will be undertaken on an ongoing, progressive basis and on completion, the final landform will be restored to a native woodland habitat.

As part of the proposed inert landfill development, suitable uncontaminated, undisturbed, natural soil waste and/or soil by-product (i.e. non-waste) which conforms to an engineering specification will be imported for re-use in the construction of the basal and side clay liners.

Some uncontaminated topsoil waste and/or topsoil by-product will also be imported for use in the final restoration of the backfilled landform. Topsoil will be temporarily stockpiled at the landfill facility as required, pending its re-use as cover material.

For the purposes of the Strategic Infrastructure Development (SID) application, it is envisaged that C&D waste recovery activities will continue for the duration of the proposed backfilling / landfilling operations and follow-on restoration works across the former quarry footprint. Planning permission for C&D waste recovery activity will expire thereafter, unless otherwise renewed by the company / Planning Authority.

The proposed development provides for the following:

- Installation and operation of a soil washing plant at the former concrete / asphalt yard to produce construction grade sand and gravel aggregate from imported excess soil and stone. The soil washing plant comprises a loading hopper, a number of soil screens in series with connecting conveyor systems, a primary wastewater treatment tank (thickener), a buffer tank holding sludge and recycled water, an elevated plate press and filter cake discharge area;
- Construction of a close-sided industrial shed (portal frame structure with roof mounted solar panels) at the existing paved area to the west of the access road to house crushing and screening equipment and process / recycle inert C&D waste (principally solid / reinforced concrete, bricks, ceramics and solid bituminous waste mixtures);
- Use of external paved and hardstanding areas surrounding the C&D waste processing shed for the external handling and storage of both unprocessed and processed C&D wastes;
- Separation of any intermixed solid construction and demolition (C&D) wastes (principally metal, timber, PVC pipes and plastic) prior to its removal off-site to authorised waste disposal or recovery facilities;
- Substantial backfilling of the existing quarry void to a maximum level of 80mOD through disposal of imported inert soil and stone waste and residual fines from the soil washing process and the use of non-waste soil by-product for engineering, capping and/or landscaping purposes
- The progressive restoration of the completed landfill landform to long-term native woodland habitat;
- Continued use of established site infrastructure and services including, site / weighbridge office, staff welfare facilities, surface water run-off and wastewater treatment systems, weighbridge, garage / workshop, wheelwash, hardstand areas, fuel and water storage tanks to service the proposed development;
- Clearance of vegetation and felling of a number of mature trees to facilitate widening of the internal site access road and make provision for off-road queuing of inbound HGVs within the application site boundary;
- Decommissioning of any remaining fixed plant and infrastructure associated with former rock extraction or concrete / asphalt production activities;
- Off-site removal of any waste materials or bulky wastes associated with former quarrying or production activities;
- Installation of a new weighbridge along the inbound lane of the quarry access road;
- Installation of an additional wheelwash facility on the eastern side of the former concrete / asphalt yard;
- Modification / upgrade of existing drainage channel along the site access road, Installation of silt trap and hydrocarbon interceptor to treat run-off and provision of additional pumping capacity to transfer run-off from existing surface water pond at site entrance to quarry sump

- Installation of a silt trap and hydrocarbon interceptor at the proposed C&D waste recovery facility to treat run-off prior to being pumped to the soil wash plant or surface water ponds elsewhere on site.
- Installation of a sub-surface concrete wastewater holding tank;
- Construction and establishment of an on-site (passive) wetland treatment system and any associated drainage infrastructure to treat / polish water collected from the active backfilling / landfilling cells prior to its discharge off-site to the Ballinclare Stream;
- Re-use of an existing storage shed as a dedicated waste inspection and quarantine facility to inspect and store suspect waste consignments as required. Any waste which has been accepted at the facility and which is likely (on basis of visual inspection) or confirmed (on basis of compliance testing) to be non-compliant with waste acceptance criteria for the facility will be temporarily stored at this location pending results of further waste classification testing and a decision as to how and where they should ultimately be disposed of or recovered;
- Re-alignment, upgrading and ongoing maintenance of internal haul routes across the application site;
- Temporary stockpiling of topsoil pending re-use as cover material for final restoration of the inert landfill / backfilled quarry void;
- Implementation of a series of measures to enhance local biodiversity including the retention of habitats and features of biodiversity value (e.g. ponds, buildings), quarry face retention for nesting peregrine falcon, establishment of an artificial sand martin colony, creation of roost space / deployment of bird boxes for bats, creation of habitat / erection of bird nest boxes for breeding / roosting birds and erection of fence along the site perimeter to include access points for mammals.
- Environmental monitoring of noise, dust, surface water and groundwater for the duration of the landfilling and restoration works and C&D waste recovery / recycling activities and for a short period thereafter;
- All ancillary site works, landscaping and perimeter fencing.

The proposed maximum intake rate of soil and stone (waste and by-product) for aggregate processing / recovery / recycling and landfilling / disposal is 550,000 tonnes per annum. The maximum rate of C&D waste recovery is 50,000 tonnes per annum, to give a maximum combined intake rate of 600,000 tonnes per annum.

All traffic to and from the proposed material recycling / recovery facility and inert landfill at Ballinclare Quarry will be routed along the L1157 Local Road, amending the previous one-way system in place when the quarry was operational, and routed inbound traffic along the L1113 Local Road and outbound traffic along the L1157.

Following discussions with the Roads Authority (Wicklow County Council), provision is made for road improvements along the length of the L1157 leading up to the quarry access, including road widening to 6.0m over the entire route length (within the existing road curtilage), with road strengthening and repair overlay and road markings. The proposed road improvement works are not anticipated to require the removal of any mature trees along this route.

The proposed development is expected to be in place for a period of up to 25 years, though this will be dependent on the rate of soil and stone / C&D intake to the proposed facility (as waste and/or by-product) over its operational life.

As the bulk of the inert soil and stone to be imported to the proposed facility is classified as waste and given the size and scale of the proposed activity, a waste licence will be required

from the Environmental Protection Agency (EPA). The proposed landfilling activity is technically classed by national and European waste management legislation as '*deposit onto land*' and the associated development as a '*waste disposal facility*'.

The size and scale of the proposed soil waste treatment and C&D waste recovery activities are also such as to require an EPA waste licence. The C&D waste recovery activities are technically classified as '*recycling and reclamation of other inorganic materials which includesrecycling of inorganic construction materials*'.

The Strategic Infrastructure application is made in accordance with the requirements of Section 37 of the Planning and Development Acts 2000-2024 (as amended) and its attendant regulations. The associated waste licence application is made in accordance with the requirements of the Waste Management Acts 1996-2024 (as amended) and its attendant regulations.

1.2 The Applicant

Kilsaran was founded in 1964 and is a wholly Irish-owned company, whose principal business is the production of materials for the construction industry. The company manufactures paving and walling, pre-mixed dry products, ready-mix concrete, concrete blocks, trowel-ready mortar, aggregates, asphalt and macadam, hard core and fill materials for the Irish and UK markets. It also undertakes surfacing contracts for road construction, building and civil engineering works.

The company employs over 900 people directly. It operates 12 hard rock quarries and a similar number of sand and gravel pits. Kilsaran manufactures concrete construction products at 20 locations, principally in the east, midlands and south of the country. The company also has 3 asphalt plants located strategically at quarry sites throughout its operational area.

Although Kilsaran's principal business interest is in mineral extraction and manufacture of building materials and products, in recent years, it has made beneficial use of excess soil and stone waste generated by construction and development activity to backfill and restore a number of its larger worked-out pits and quarries under the EPA waste licensing regime.

The company has also established a number of construction and demolition (C&D) waste recycling facilities, principally to manage concrete wastes, under the Local Authority waste facility permitting regime.

At the present time, it operates an EPA licensed soil waste recovery facilities at Kilmessan in Co. Meath (Waste Licence Ref. No W0296-01) and at Halverstown, Co. Kildare (Waste Licence Ref. No. W0300-01).

1.3 Application Site

The application site and Kilsaran property holding at Ballinclare Quarry straddle two townlands, Ballinclare and Carrigmore. The application site lies approximately 2.5km to the north-west of a small settlement at Kilbride, Co. Wicklow and approximately 2.5km south of the village of Glenealy. The site location is indicated on an extract from the 1:50,000 Discovery Series Map of the Area in Figure NTS-1 and on a 1:10,000 scale Ordnance Survey plan of the area in Figure NTS-2.

The overall landownership area is c.36 ha (89 acres), while the application site covers approximately 32.6ha (80.5 acres). The application site extends across all of the former quarry footprint and includes the former concrete / asphalt production area, a paved concrete area to the west of the existing site access road, pre-existing site buildings and infrastructure and a network of settling ponds in the north-western corner.

It excludes a compound / yard area leased to Wicklow County Council in the north-western corner of the landholding, identified as its Carrigmore Depot. Permission for quarrying of

rock at the quarry was previously granted under Planning Ref. 14/2118. The existing site layout is shown in Figure NTS-3.

1.4 Background to Proposed Development

Ballinclare Quarry is owned, and was previously operated by Kilsaran up to June 2016, when it was discovered that small quantities of naturally occurring asbestos (NOA) were present in the diorite bedrock that was being quarried. Following suspension of extractive activity and associated materials production, Kilsaran examined the feasibility of a range of development options for the quarry, focussing in particular on waste management opportunities to backfill and restore the quarry using imported soil / C&D waste materials and taking account of aspects such as the availability of materials, available intake capacity at, and location of, other existing waste facilities, market entry and establishment costs and potential water treatment costs).

Arising out of this review, Kilsaran decided to establish a waste management facility at the quarry which would facilitate the backfill and restoration of the quarry void using imported inert soil / C&D waste materials. This was to be achieved by developing an engineered landfill facility within the quarry void with a natural, low permeability clay liner at its base and sides to protect groundwater. At that time, it was envisaged that on completion of the quarry backfilling and restoration works, the site would be restored to a landform with long-term grassland / scrub habitat similar to that which existed prior to quarrying.

The proposed development also provided for the establishment and operation of a construction and demolition (C&D) waste recovery facility at the paved area to the west of the site access road (to produce recycled aggregate from mass / reinforced concrete, blocks, paving stones, hardened asphalt returns) and a soil washing plant at the former concrete yard (to produce recycled aggregates from excess natural / waste soils).

In view of the projected scale of waste intake to the facility (up to 800,000 tonnes per annum), the proposed development was referred to An Bord Pleanála in June 2019 as required under Section 37B of the Planning and Development Act of 2000 (as amended) to establish whether or not it met the legislative criteria for Strategic Infrastructure Development (SID) (Referral Ref. ABP-304735-19).

The Board confirmed that the proposed development did constitute SID in February 2020, and a planning application in respect of the development was duly submitted directly to ABP in April 2021. That application (Ref. No. ABP-309991-21) was ultimately refused permission in October 2023, principally on account of perceived deficiencies in baseline ecological surveys around the application site. All other aspects of the proposed development, including need, compliance with policy objectives and traffic impact were deemed satisfactory by the ABP Inspector in his report to the Board.

On foot of the refusal for the SID application for the waste management facility at Ballinclare Quarry, Kilsaran undertook a further review of its site development strategy and decided to submit a modified planning application which addressed a number of issues and concerns raised in respect of the earlier proposal and which also had regard to recent developments in waste policy and regulation promoting the development of the circular economy.

1.5 Site Access

At the current time, traffic travelling to the application site principally travels to Junction 18 of the M11 Motorway between Dublin and Wexford (beside the Beehive Inn) and travels south-west from there for approximately 3.8km along the L1113 Local Road to Ballinclare Quarry. Thereafter, traffic turns left at a T-junction and travels for a further 0.6km along the L1157 local road to the entrance to Ballinclare Quarry.

Alternatively traffic travelling along the R772 Regional Road (the former N11 National Primary Road) can turn off at the Green Angel Skincare / Junction 18 Café premises (the

former Tap Restaurant at Kilbride and travel north-westwards for approximately 2km along the L1157 local road to the entrance to Ballinclare Quarry.

1.6 Site Drainage

When it was operating, the quarry at Ballinclare was effectively worked dry, with very little inflow of groundwater recorded into the quarry void. A sump was located at the lowest point on the quarry floor and collected any surface water falling over the excavation area as well as any minor inflows of groundwater which may have arisen. The water collecting in the sump was periodically pumped to water storage tanks for subsequent re-use in concrete production on-site or for dust suppression.

At the present time, rainfall across the existing quarry site (including the former concrete / asphalt production yard) generates run-off which generally falls to the quarry void, while run-off across the western side of the quarry site falls to the drainage channel leading off-site to the Ballinclare Stream. Given that the diorite bedrock is a poor aquifer, there is relatively little infiltration to ground or recharge to the underlying groundwater table.

After extraction and production activities were suspended in 2016, quarry dewatering ceased in the absence of any on-site outlet or end use for the water collecting in the quarry sump. In subsequent years, the quarry void was flooded by surface water run-off from surrounding ground and (relatively minor) groundwater inflows and water levels within the quarry rose gradually over time.

In November 2019, Wicklow County Council issued a discharge licence (Ref. No. WPL116) which provided for off-site discharge of water collecting in the quarry void to the Ballinclare Stream immediately beyond the north-western site boundary. Approximately 400m north and downstream of the discharge point, the Ballinclare Stream flows into the much larger Potters River.

The discharge licence provides for the pumping of water from the quarry void (using a rising main pipe) to an existing on-site treatment unit located at the former storage area upstream of a series of existing settlement ponds. The approved water treatment system was installed and commissioned in October 2022 and quarry dewatering commenced shortly thereafter. The system comprises a bespoke Siltbuster treatment plant which reduces naturally-elevated concentrations of arsenic identified in the water which collected in the quarry void, as well as also effectively removing any suspended solids.

Following treatment at the Siltbuster plant, surface water run-off flows under gravity towards the settlement ponds for further polishing and sediment removal. All off-site discharges are sampled and tested in accordance with licence requirements. Test results to date have been consistently compliant with the emission limit values set by the discharge licence.

1.7 Surrounding Land Use

The area surrounding the application site at Ballinclare Quarry is typically rural in character and dominated by forestry and undulating agricultural land. Ground level in the vicinity of the application site generally lies between 60mOD and 70mOD. Ground levels rise in a south-westerly direction to c.270mOD at Westaston Hill (approximately 2km SW) and in a northerly direction to 217mOD at Ballincooley Hill (approximately 1.75km N).

Potters River flows approximately 450m beyond the northern boundary of the application site and then turns south-eastwards and flows approximately 250m to the east of the landholding. Thereafter it continues south-eastward and eventually discharges to the sea at Brittas Bay.

Residential property in the vicinity of the application site generally comprises farmsteads and isolated / one off houses along the local road network. The nearest dwellings to the landholding boundary are those located to the south, west and north of the site, along the local county road network.

There is another quarry located in Kilmacurra West, on the opposite side of the L1157 Local Road. It is understood that this quarry is not currently active.

The principal tourism / amenity facility in the vicinity of the quarry is the Kilmacurragh Botanic Gardens, an outpost of the National Botanic Garden in Glasnevin, Dublin, which is located just under 1km to the south-west of the site.

There are no designated nature conservation sites (Special Area of Conservation (SAC), Special Protection Area (SPA), Natural Heritage Area (NHA) or proposed Natural Heritage area (pNHA) within or adjacent to the application site. The closest such sites are the Deputy's Pass Nature Reserve SAC (Site Code 000717) and the Glenealy Woods pNHA (Site Code 001756), which, at their closest point are located approximately 1.6 km and 1.1km to the north-west of the application site respectively. The next closest site is the Buckroneys-Brittias Dunes and Fen SAC (Site Code 000729) some 7km southeast of the application site.

There are no recorded monuments located within or immediately adjacent to the application site. The nearest recorded monument is located approximately 300m to the west, in a nearby agricultural field and is identified as a church, holy well and graveyard (Ref. WI030-014). While there is now no physical trace of it, the local 25-inch historical map identifies it as the site of Kilmanoge Church.

There are no structures identified on the National Inventory of Architectural Heritage within or in the immediate vicinity of the application site. There nearest protected structures in the local area are

- (i) Westaston Demesne Country House (Structure No. 30-18) is a late-17th Century house which now in ruins, located approximately 0.9km to the south-west of the application area
- (ii) Coolacork Country House (Structure No. 31-06), a late 18th Century house located approximately 0.95km to the north-east.

There is a further cluster of protected structures located around the townland of Ballymurrin Lower, approximately 1.5km to the east of the application site (and to the east of the M11 Motorway).

According to the current Wicklow County Development Plan 2022-2028, the application site is located within a landscape sensitivity area identified as a "Corridor Area East". This area is described as "The N11 corridor" comprising lands along *"the main access corridor along the east of the County"*.

The online Irish Geological Heritage map indicates that Kilmacurra Quarry on the western side of the L1157 Local Road is designated a County Geological Site (CGS). The quarry, which is currently partially flooded is located approximately 700m to the south west of the application site. There are no other designated geological sites in the immediate vicinity.

Details of natural features, established land-use and development surrounding the application site at Ballinclare Quarry are shown on Figure NTS-4.

1.8 Alternatives

There has been a range of recent policy and regulatory developments to facilitate a national progression to a circular economy in the construction and development sector and to significantly reduce the volume of material which is generated and managed as waste across the country. Progression to a circular economy is also necessary given the widely acknowledged shortage of landfill capacity and the shortage of natural / virgin aggregate sources particularly within the Greater Dublin / Midland region.

The proposed development at Ballinclare Quarry, and specifically the soil washing and C&D waste recovery activities, will provide the dedicated infrastructure facilities and additional

capacity required to facilitate the transition to a circular economy within the construction and development sector in coming years.

The proposed establishment and operation of a materials recycling / recovery facility and inert landfill at Ballinclare Quarry offers clear environmental and economic advantages relative to other locations and/or greenfield sites. Although they may differ slightly in their nature, scale and duration, the environmental impacts arising from the proposed C&D waste recovery / recycling and landfilling activities at the application site (specifically in respect of dust and noise emissions, potential impacts on groundwater and traffic related impacts) will essentially be similar to those which previously existed when rock was previously being extracted and aggregates / related construction materials (i.e. concrete and asphalt) were being produced at the site.

Another option in locating the proposed development would be to locate it, or at least the materials recovery and recycling elements of it (i.e. the soil washing plant and C&D waste recovery facility) on appropriately zoned lands within or on the fringe of built-up urban areas across the Greater Dublin Area. A review of County Development Plans in the region and development permitted under various land zoning classes however indicated that in view of its proximity to, and the density of, any existing or planned future development, a materials recovery / recycling facility of the scale envisaged at Ballinclare Quarry would struggle to demonstrate that it does not detract from local amenities and/or stated land zoning objectives. As such, it would most likely fail to secure planning permission.

If no future works or development is undertaken within the application site, the existing landform and quarry void would remain in its current disturbed state. It is unlikely that the lands would ever be restored to any long-term beneficial land-use and that there would be a continued risk that surface activities could have a potential adverse impact on any underlying groundwater.

With the cessation of dewatering activities, groundwater levels would recharge and the quarry void fill with surface water and/or groundwater which may contain elevated levels of arsenic arising from surrounding natural rock / groundwater (as it did prior to being dewatered). There is also a risk that, unless otherwise managed, water levels in the quarry void could rise to a point where it runs-off over ground in an uncontrolled manner to the Kilmacurragh Stream at the south-eastern corner of the quarry.

Subject to implementation of best environmental management practices and compliance with appropriate planning and licensing controls (i.e. planning conditions and standard emission limit values), the operation of the proposed materials recovery / recycling facility and inert landfill at this location is considered to be more appropriate, more sustainable and less likely to generate significant impacts than a similar facility at other alternative locations.

2.0 DESCRIPTION OF THE DEVELOPMENT

2.1 Overview

As previously indicated, the proposed development located at Ballinclare Quarry, near Kilbride, Co. Wicklow, provides for the establishment and operation of a licensed, integrated material recovery / recycling facility and inert landfill which comprises three key elements:

- a soil washing plant to win aggregate from imported soil and stone;
- a construction and demolition (C&D) waste recycling facility to produce aggregate from construction and demolition waste (principally concrete); and
- an inert engineered (i.e. lined) landfill to facilitate backfilling and restoration of the existing quarry void.

The proposed development also provides for the establishment and operation of a soil washing plant in the former concrete / asphalt production yard in the south-western corner of the application site and a construction and demolition (C&D) waste recovery facility at the paved area to the west of the access road. The soil washing plant will effectively recover sand and gravel and recycled (secondary) aggregates from selected, more granular soil intake (managed both as waste and non-waste by-product) and claybound C&D waste intake imported to the facility. The principal wastes to be recycled (crushed and screened) at the C&D facility will include concrete (ready-mixed, reinforced, blocks and/or pavement slabs), bricks and bituminous mixtures / hardened asphalt.

Recovered aggregates will generally be transferred off-site to one of Kilsaran's other locations or facilities and re-used in the production of construction materials. They may also be supplied directly to off-site construction projects but could possibly also be used to construct the groundwater control system (beneath the basal clay liner) at the adjoining inert landfill or supplied for other engineering uses within the application site.

Kilsaran proposes to backfill the quarry at Ballinclare to a final ground level of approximately 80mOD and to leave the upper rock face exposed for a height of up to 15m to facilitate continued nesting by peregrine falcons. The final completed landform will substantially, though not entirely, re-establish the former landform that existed at the application site prior to commencement of historical quarrying activities. Progressive restoration will continue over the life of the development to achieve a final native woodland habitat landform to cover the quarry footprint.

The inert wastes to be imported and landfilled will principally comprise naturally occurring soil, stone and broken rock excavated in the course of construction projects, with construction and demolition (C&D) waste being imported and used in the construction of internal haul roads across the backfill area.

All imported waste accepted and placed at the inert landfill facility will comply with the waste acceptance criteria (WAC) for inert landfills set by Council Decision 2003/33/EC¹.

As part of the development, suitable uncontaminated natural, undisturbed non-waste soils (classified as a by-product²) which conforms to an engineering specification will be imported for re-use in the construction of the basal and side clay liners required for the inert landfill. The clayey soils used in liner construction have relatively low permeability and will restrict groundwater flow out of the backfilled quarry, thereby protecting groundwater quality in the surrounding environment from any potential adverse impact.

¹ Council Decision 2003/33/EC of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC

² Notified to the Environmental Protection Agency (EPA) under Article 27 of the European Communities (Waste Directive) Regulations 2011, S.I. No. 126 of 2011)

The landfill development and backfilling of the quarry void will be undertaken on a phased basis, working progressively from west to east. Restoration of the final landform will also be undertaken on an ongoing, progressive basis and will entail placement of cover soils and grass seeding to promote stability and minimise soil erosion and potential dust emissions.

Some uncontaminated topsoil waste and/or topsoil by-product will also be imported for use in the final restoration of the backfilled landform. Topsoil will be temporarily stockpiled at the inert landfill facility as required, pending its re-use as cover material..

The backfilling and restoration of the quarry through importation and landfilling of inert waste is designated a waste activity under national and European waste management legislation. The proposed waste activities are technically classified as '*deposit into or on to land*', '*specially engineered landfill*' and '*recycling / reclamation of other inorganic materials*' under the regulations. The scale of the proposed landfilling operations and the planned annual rate of construction and demolition waste recovery are such as to require a waste licence from the Environmental Protection Agency (EPA).

2.2 Site Infrastructure

Much of the infrastructure required to service the proposed inert waste management facility is already in place at the application site and includes site / weighbridge office, staff welfare facilities, wastewater treatment system, garage / workshop, wheelwash, hardstand areas, fuel and water storage tanks to service the proposed development.

The proposed development provides for the installation of a new (additional) weighbridge along the inbound lane of the access road, for the installation of a new (additional) wheelwash at the former processing yard in the south-eastern corner of the site, installation of a wastewater storage tank, additional hydrocarbon interceptors to treat run-off from paved areas and re-use of the former aggregate storage shed at the southern site boundary (at the southern limit of the former concrete / asphalt production area) as the on-site waste inspection and quarantine facility.

The proposed initial site layout when all proposed waste management facilities are established and fully operational is shown in Figure NTS-5.

2.2.1 Soil Washing / Aggregate Recovery Plant

At the outset of the project, a soil washing plant will be set up and commissioned in the former concrete / asphalt production yard in the south-eastern corner of the application site. The proposed location and configuration of the soil screening / aggregate recovery plant is shown in the site layout plan in Figure NTS-5.

The soil washing plant comprises a loading hopper, a number of soil screens in series with connecting conveyor systems, a primary wastewater treatment tank (thickener), a buffer tank holding sludge and recycled water, an elevated plate press and filter cake discharge area.

There will be no surface water / groundwater emissions or off-site discharges arising from the proposed soil washing and aggregate recovery activities as all process water will be re-circulated within a closed loop system. As such, there is therefore no requirement to make provision for treatment for any process water associated with the activity.

All elements of the washing plant are either mobile or largely self-standing and can be readily lifted into place, assembled in-situ and relocated / removed as required. Most of the plant will be supported on the existing concrete slab which extends across the former production yard.

2.2.2 Proposed C&D Waste Recovery Shed

It is proposed to construct a large, roofed portal frame structure with roof-mounted solar panels at the existing paved concrete area to the west of the site access road, as indicated in the site layout plan in Figure NTS-5. The shed will have a plan footprint area of

approximately 42m long by 36m wide with a maximum height at the roof apex of 12m. All C&D waste recovery activities take place within the structure in order to reduce potential noise and dust emissions.

Surface water run-off from the shed roof and the existing paved concrete slab will be collected by surface water drains and/or channels around the perimeter of the slab and passed through a silt trap and hydrocarbon interceptor before being pumped to the water recycling / storage tanks at the soil wash plant. Run-off may also be directed to the proposed Integrated Constructed Wetland or temporary balancing ponds constructed at backfilled quarry areas (depending on which phase of landfilling is ongoing and whether or not there is a potential water deficit at the facility at the time).

2.3 Site Access

Under the current planning permission (Planning Ref 07/45 and 14/2118), HGV's travelling to and from Ballinclare Quarry are directed to use a dedicated one-way haul route. HGV's approaching the quarry from M11 Junction 18 (at the Beehive Inn) travel approximately 4km along the L1113 Local Road, then turn left onto the L1157 Local Road and travel a further 600m up to the junction with the existing quarry access road. Traffic departing the quarry turns left and travels along the L1157 for approximately 2km, up to its junction with the R772 Regional Road (the former N11 National Primary Road) at the Tap Restaurant, and from there proceeds north (or south) to access the M11 Motorway and the National Road network.

As part of the pre-application consultations undertaken with Wicklow County Council (in respect of the earlier (2021) planning application), a walkover survey of the existing local road network around the application site was undertaken and an assessment made of aspects such as road geometry, structural integrity, traffic flows and travel speeds.

Based on these assessments and having regard to local traffic flow characteristics and the changes arising after the M11 motorway opened in 2015, Wicklow County Council advised that it would be preferable to revise the existing long established haul route to the quarry / application site so that HGVs would avoid the L1113 Local Road and would instead travel the shorter distance to and from the R772 Regional Road, in both directions along the L1157 Local Road. In more recent follow-up discussions with Council officials in September 2024, in advance of submitting this planning application, it was confirmed that this remains the Council's view / recommendation.

In light of this feedback, this proposal provides for all traffic to and from the proposed materials recovery / recycling facility and inert landfill at Ballinclare Quarry along the L1157 Local Road (also known locally as the Breagura Road). It includes provision for a comprehensive road improvement scheme along the length of the L1157 leading up to the application site, including road widening to 6.0m everywhere along its length, with road strengthening and repair overlay and road markings where required.

Under the routing proposal, it is expected that the majority of the HGVs travelling to the proposed development from Dublin and North Wicklow will use the M11 Motorway, exiting at Junction 18 and joining the R772 Regional Road southbound. After travelling south for approximately 4km, traffic heading for the facility will turn right, off the R772, and onto the L1157 at the ghost island junction beside the Junction 18 Coffee Shop and Green Angel premises at Kilbride. The access junction to the quarry and proposed development is located along the L1157, approximately 2km north-west of the R772 junction.

It is expected that only a minor proportion of HGV traffic will arrive from the direction of Arklow and North Wexford to the south. This traffic will use the M11 Motorway, exiting at Junction 19 to turn onto the R772 Regional Road at Jack Whites Pub. It will then travel north for approximately 5km, turn left off the R772 and onto the L1157, and continue thereafter up to the quarry and proposed development.

The proposed haul route requires all HGV traffic (with the exception of that travelling west to Rathdrum or to local sites) to turn left when departing the proposed facility and follow the upgraded L1157 back to the junction with the R772 Regional Road, and from there continue toward the national motorway network.

2.4 Rate of Importation

It is envisaged that the combined (cumulative) intake of (i) inert soil / C&D waste for on-site disposal and recovery and (ii) non-waste by-product material required for on-site landfill engineering works or supplied to the soil wash plant, will not exceed 600,000 tonnes per annum. Within this overall intake, the annual intake of soil and stone (waste and by-product) is likely to be of the order of 550,000 tonnes per annum and the annual intake of inert, construction and demolition waste will be of the order of 50,000 tonnes per annum.

The combined annual intake of 600,000 tonnes per annum is equivalent to an average of

- 12,000 tonnes per week (assuming 50 weeks in a working year)
- 2,400 tonnes per day (assuming 5 days in a working week)
- 240 tonnes per hour (assuming 10 hours in a working day)

If it conservatively assumed that each HGV / truck consignment travelling to the waste facility has a carrying capacity of 25 tonnes, this suggests that at maximum intake rates, there will be on average 9 to 10 HGV / truck trips (or 18 to 20 HGV / truck movements) per hour generated by material recovery / recycling and backfilling activities.

In order to minimise increases in HGV traffic across the existing public road network, recycled aggregates generated by soil washing and C&D waste recovery activities will be dispatched off-site using a 'backloading' system whereby trucks delivering soil or C&D waste to Ballinclare Quarry will pick up a consignment of recycled aggregate before departing the site and will either take it directly to a construction site or to one of the Applicant's concrete production facilities.

2.5 Site Preparation Works

Prior to commencement of the recycling / recovery and backfilling activities at the application site, the following site preparation works will be required :

- Securing existing site perimeter with additional fencing / planting as required (including deer fence);
- Completing the dewatering of the quarry void in advance of engineering (lining) works and inert waste landfilling activities;
- Felling of a small number of mature trees along the western side of the existing internal access road to facilitate its widening and construction of 2 internal queuing lanes for HGVs;
- Modification / upgrade of existing drainage channel along the site access road to facilitate construction of additional queuing lane and the increase in paved area along site access road. Installation of silt trap and hydrocarbon interceptor to treat run-off and provision of additional pumping capacity to transfer it from existing surface water pond at site entrance to quarry sump;
- Installation of a silt trap and hydrocarbon interceptor at the proposed C&D waste recovery facility;
- Cutting and mulching of any existing scrub and vegetation across the proposed development footprint and off-site removal to authorised waste facilities (to be undertaken in phases prior to commencement of works in designated areas);
- Decommissioning and dismantling of any other legacy infrastructure from prior development (e.g. production plant, metal, WEEE, additives etc.) and removal off-site to other Kilsaran production sites or authorised waste facilities as required;

- Reconfiguration of existing site office and re-establishment of staff welfare facilities;
- Installation of new weighbridge at the northern end of inbound lane along internal access road;
- (Re-)commissioning the existing wheelwash facility on outbound lane of site access road and construction of an additional wheelwash facility on the eastern side of former concrete / asphalt yard (in the south-eastern corner of the site);
- Minor repair / maintenance / upgrading works to existing bunded fuel storage area and concrete slab with sub-surface drainage to hydrocarbon interceptor and soakaway area;
- Maintenance and continued use of previously approved septic tank and wastewater treatment facilities and installation of sub-surface concrete wastewater holding tank (to augment existing capacity);
- Maintenance and continued use of existing (Siltbuster) water treatment plant to treat off-site discharge from sump in quarry floor and/or water balancing ponds;
- Excavation, clearance and levelling of existing ground at proposed wetland area and construction of the wetland treatment area;
- Installation and commissioning of the soil washing plant in the former concrete / asphalt yard;
- Construction of the proposed concrete portal frame structure (open on two sides) at the C&D waste recovery facility at the paved area to the west of the access road;
- Construction / installation of surface water drainage infrastructure between the inert landfill area, recovery shed and C&D waste recovery area, existing settlement ponds and proposed wetland area;
- Upgrading of internal access roads across the site leading to the initial landfill cell (Phase 1A) on the western side of the quarry, the soil washing plant, C&D waste recovery facility and wetland area;
- Establishment of biodiversity enhancement features; and
- Establishment of environmental control and monitoring infrastructure.

2.6 Landfill Design

The final, restored landform at Ballinclare Quarry has been designed to produce a very slightly domed / sloping plateau that falls from the northern side of the site to the south eastern corner, refer to the landfill cross-sections in Figure NTS-6 and the final site restoration plan in Figure NTS-7. The landfilling works will progress initially from west to east across the existing quarry void to approximately 60mOD in Phases 1A to 1D. It will then extend upwards to 80mOD in Phase 2 as indicated in Figure NTS-8 and turn southwards thereafter to fill over the former processing / production area in Phase 3 as indicated in Figure NTS-9.

The diorite bedrock at Ballinclare Quarry is classified by the Geological Survey of Ireland (GSI) as a '*poor aquifer (PI) which is unproductive except in local zones*'. GSI mapping also indicates that the quarry is not located within a source protection area for water supplies. Guidance on Groundwater Protection Responses for Landfills published by the GSI suggests that this hydrogeological setting is generally suitable for landfill development, subject to EPA landfill design guidance and/or conditions attached to a waste licence.

EPA guidance requires that the base and sides of inert landfills should be lined with a low permeability clay soil (mineral) layer with a *minimum thickness 1m and a hydraulic conductivity or permeability less than or equal to $1 \times 10^{-7} \text{m/s}$* . It is envisaged that the basal / side liner at this facility will comprise uncontaminated pre-selected, clayey glacial till (or boulder clay), sourced from construction activities at greenfield sites (which were not previously developed) across the wider region.

The basal liner will have an upper formation level of approximately 38mOD (i.e. 1m above the quarry floor). Around the perimeter of the existing quarry, a 2m wide steepwall clay liner will be installed against the face of the quarry. It will be installed progressively upwards from the lined quarry floor as the landfilled waste also progresses upwards. Both the basal and side wall liners will be subject to testing to confirm that it achieves the low target permeability required for an inert landfill.

Currently several stockpiles and a and a locally deeper quarry bench (extending to approximately 22mOD) are located on the existing quarry floor. The deeper bench is partially flooded at the present time and this will remain in place over the initial phase of landfill development to effectively function as a sump to collect all run-off and groundwater inflow which does not come into contact with backfilled waste materials. As the landfill activities progress toward this area however, the sump will be progressively backfilled with previously excavated rock in existing stockpiles, other excavated rock / stone across the quarry site, as well as soil imported from external greenfield sites.

The requirements set out by the EPA Guidance for inert landfill sites are that the final restored surface should comprise topsoil and subsoil, thickness, dependent on after use. It has been assumed for conceptual design that 150mm of topsoil over 500mm of subsoil will be used in the final restoration of the completed landform at Ballinclare Quarry.

2.7 Water Management

2.7.1 Quarry Dewatering

The former quarry was effectively worked dry with very little inflow of groundwater reported within the void. A quarry sump located at the lowest level on the quarry floor collected any surface water falling over the void area and any minor inflows of groundwater which occurred. This water was recycled and used in concrete production activities and on-site dust suppression, with periodic pumping of water to on-site storage tanks as required.

After quarrying was suspended in 2016, the quarry void flooded in the absence of any dewatering or use for surface water run-off and groundwater inflows. To enable the quarry to be re-engineered as an inert landfill, dewatering of the quarry void commenced in October 2022 and is currently ongoing, with ponded waters being pumped to an on-site water treatment system and discharged to the Potters River, in line with an existing Local Authority discharge licence (Ref. WPL 116).

Previous experience of operating the quarry is that the surrounding volcanic rock is relatively tight, with relatively limited volumes of groundwater flowing through it. The volume of groundwater likely to collect at the low point on the quarry floor (at the deeper excavation to 22mOD in the middle of the quarry) is therefore expected to be low. This area will effectively act as a sump over the initial landfiling stages and the bulk of any water collecting in it will comprise infiltrating rainfall and/or surface water run-off over the exposed quarry floor.

2.7.2 Water from Landfilled Areas

From the outset, temporary surface water ponds will be formed behind earthwork berms at the low point of active backfilling / landfiling areas in order to capture any surface water run-off (or groundwater flows) which have been in contact with the body of backfilled waste. These ponds will facilitate some initial settling out of suspended solids before the water collecting in them is either recirculated within the landfill cell itself or pumped to recycling / storage tanks for subsequent use in soil washing or dust suppression.

Any excess water held in temporary ponds / sumps at active landfill areas thereafter will be pumped across to the proposed Integrated Constructed Wetland (ICW) for treatment and removal of contaminants prior to off-site discharge to the Ballinclare Stream and Potters River.

During the initial phase of landfill development, any excess water build-up in ponds at the active (Phase 1A) landfill areas which is not recirculated or recycled at the soil wash plant will be tankered off-site and brought to a Local Authority wastewater treatment plant for treatment. This arrangement is necessary at the outset while the proposed Integrated Constructed Wetland (ICW) is constructed and the vegetation therein becomes sufficiently well established to take up any contaminants in any run-off passing through it

2.7.3 Water from Non-Landfill Areas

The proposed phasing of landfill cell development within the existing quarry void endeavours to keep the existing deeper bench / sump in the middle of the existing quarry floor in use for as long as possible and to collect all surface water run-off and groundwater inflow across the quarry footprint (and the former production area in the south-eastern corner of the application site) which does not come into contact with backfilled or stockpiled wastes.

When necessary and when capacity is available, water collecting in the sump will be pumped to recycling / storage tanks and used for soil washing at the nearby plant or for on-site dust suppression. Any excess water remaining at the sump will be pumped to the existing water treatment plant (to remove metals / suspended solids) and discharged off off-site thereafter via the existing series of settlement ponds.

As the lower excavation / sump area is being backfilled, a number of temporary balancing ponds will be constructed at restored quarry areas to retain the surface water run-off from the quarry floor (and the former production area in the south-eastern corner of the application site). Temporary balancing ponds are required over later landfilling stages to manage and address a potential deficit which would otherwise arise with the volume of surface water run-off available to supply the soil wash plant.

As the inert landfill is progressively restored, surface water ditches will be constructed as part of the works to capture surface water run-off flowing toward the backfilled landform and divert it off-site, without any requirement for treatment.

2.7.4 Control of Uplift Pressures

At the outset of the proposed landfill development, a groundwater control system will be installed beneath the protective clay liner system at the base of the quarry / inert landfill to ensure hydrostatic uplift pressures do not damage it. It is envisaged that the drainage system under the basal liner will comprise a herringbone system of granular drainage channels and that these would feed groundwater inflows to a collection point at the deeper excavation / sump in the middle of the existing quarry floor.

When filling of the quarry void extends across most of the quarry footprint (in Phase 1C), riser pipes will be installed at the deeper excavation / sump area to facilitate the continued operation of the groundwater collection system controlling uplift pressures beneath the basal liner. Submersible pumps will be placed in these risers and will continually lift and remove any dewatered groundwater collecting in them. Pumping will continue until such time as the overlying inert waste has reached a depth / height where the weight of waste exceeds the maximum uplift pressure from surrounding groundwater. At that point in time, pumping of groundwater is likely to cease and the riser pipe will be decommissioned by backfilling it with bentonite.

2.7.5 Water Treatment

Although dewatering of the quarry is progressing at close to the maximum rate permitted by the trade effluent discharge licence, it is expected that once dewatered, future off-site discharges will be at a notably lower rate during the landfilling / operational phase, particularly as much of the collected run-off will be diverted for use in soil washing and/or dust suppression.

The approved water treatment system which is currently installed on-site to facilitate the ongoing quarry dewatering comprises a bespoke Siltbuster treatment system and is necessary to treat naturally elevated levels of arsenic which were observed in the ponded water collecting in the quarry void. As well as reducing arsenic concentrations, the unit is also quite effective in removing suspended solids from the ponded water.

The existing water treatment system will remain in service to complete the ongoing quarry dewatering and also prevent the quarry void being re-flooded. It is also envisaged that the existing on-site Siltbuster treatment system will remain in service for the duration of the proposed materials recovery / recycling and landfilling activities.

In waste management, 'leachate' is the term assigned to the slightly contaminated liquid that is generated as influent rainwater and/or groundwater flows over or through a waste mass, picking up soluble and particulate matter as it moves to a low point at the base of the landfill. Landfill leachates have varying compositions that reflect the types of wastes deposited, through which rainfall percolates. There is on-going generation of leachate from rainfall and groundwater sources over the operational life of a landfill. As a result of the containment provided by the basal and side liners, any leachate from the landfilled mass needs to be captured, removed and treated prior to being discharged off-site. Leachate may also be generated for a period after landfilling activities have ceased. Once landfilling activities are complete and capped (covered) with low permeability soils, the infiltration of rainfall and the volume of leachate generated will be reduced.

A number of potential leachate treatment and disposal options were considered for the proposed inert landfill and waste recovery facilities at Ballinclare in addition to the existing water treatment system (which, as noted above, is principally required to deal with elevated arsenic levels in water which ponds in the quarry void). Arising out of this review, it was considered that the most suitable option for treatment of any leachate requiring reduction of inorganic substances would be an on-site (passive) wetland treatment system.

As the inert landfill is not currently in existence at Ballinclare Quarry, some initial assumptions have had to be made about the likely quality of leachate that will be produced by the inert landfill and the volumes that will be generated over time. For the purposes of this development proposal and EIAR, worst case scenarios have been considered both in terms of leachate quality (most problematic in terms of composition) and volume (highest generation volume).

An initial assessment indicates that there is sufficient spare land available at Ballinclare Quarry for a wetland treatment system at the western site area, adjacent to the planned landfill footprint. For initial sizing / EIA purposes, it has been assumed that the volume of leachate requiring treatment at the proposed waste facility will be limited by progressive capping and/or restoration of the landfill landform over its operational life. Thereafter, worst case scenarios have been considered both in terms of leachate quality (most problematic in terms of composition) and volume (highest generation volume).

Should it be necessary, the effectiveness of wetland treatment systems can be enhanced by the temporary addition of various, more active treatment systems, such as chemical dosing, aeration or other such processes. This can allow a wetland system to handle higher contaminant loads or flows for periods of time (should it be necessary) before reverting to more standard modes of operation, therefore providing flexibility should leachate generation rates and chemical constituents change over time.

Based on the initial assessment and design, the proposed wetland treatment system for leachate from landfilled areas at Ballinclare Quarry will comprise the following :

- (i) A wetland treatment system : comprising the following elements in series
 - (a) Anaerobic (biochemical reactor) wetland;
 - (b) Iron Sequestering Unit (ISU);
 - (c) Aerobic wetland

- (ii) A leachate reception tank : up to 50m³, self-bunded storage tank with level controls.
- (iii) A pump house : housed in a standard shipping container (6.0m x 2.4m x 2.6m) containing feed, discharge and chemical dosing pumps;
- (iv) Off-site discharge via existing ditch / drainage channels to the Ballinclare Stream and the Potters River further downstream.

Based on the assumption that the leachate flow rate is generated from a progressively capped inert landfill, the area of on-site wetland required at Ballinclare is assessed to be of the order of 1.06 hectares. The location and scale of the proposed wetland treatment area is indicated in Figure NTS-8.

2.8 Waste Activities and Procedures

2.8.1 Waste Intake

The former quarry will be backfilled using only inert soil materials (and engineering / by-product materials with some construction and demolition wastes for haul road construction) from external, pre-approved application sites which comply with the inert waste acceptance criteria set out in Section 2.1.2 of *Council Decision 2003/33/EC dated 19 December 2002 establishing criteria for the acceptance of waste at landfills*.

Only waste which has been pre-approved for acceptance at the facility will be imported. No peat, non-inert, contaminated soils or non-hazardous waste will be accepted at the proposed facility.

It is envisaged that the following wastes (with their respective List of Waste (LoW) Codes) will be deposited on land / landfilled at the application site:

- 01 01 02 Waste from mineral non-metalliferous excavations
- 01 04 12 Tailings and other waste from washing and cleaning of minerals
- 01 04 08 Waste gravel and crushed rocks other than those mentioned in 01 04 07
- 01 04 09 Waste sand and clays
- 01 04 12 Tailings and other wastes from washing and cleaning of materials other than those mentioned in 01 04 07 and 01 04 11
- 01 04 99 Wastes not otherwise specified*
- 10 10 06 Casting core and moulds which have undergone pouring
- 17 05 04 Soil and stones other than those mentioned in 17 05 03;
- 17 05 06 Dredging spoil other than those mentioned in 17 05 05;
- 17 06 04 Insulation materials*
- 17 09 04 Mixed construction and demolition wastes*
- 19 09 02 Sludges from water clarification*
- 19 09 04 Spent activated carbon*
- 19 12 12 Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11*
- 20 02 02 Soil and stone from municipal facilities.

(* subject to licensing approval by the EPA)

The inert waste landfill will also take soil and stones (LoW Code 17 05 04) which could also be acceptable for intake at (unlined) soil recovery facilities or which may not be acceptable for intake to such facilities for failing to meet any existing or future Waste Acceptance Criteria published by EPA.

Other C&D waste streams accepted for waste recovery in mixed consignments will be segregated during materials recovery and processing at the recovery facility. All segregated

wastes will be placed in stockpiles / dedicated bays / skips inside the recovery shed and will be transferred off-site to appropriately authorised waste recovery or disposal facilities. It is envisaged that the following wastes (with their respective List of Waste (LoW) Codes) will be accepted for recovery at the C&D waste recovery facility at the existing paved area:

- 10 12 01 Waste preparation mixture before thermal processing;
- 10 12 06 Discarded moulds
- 10 12 08 Waste ceramics, bricks, tiles and construction products (after thermal processing)
- 10 13 11 Waste from cement-based composite materials other than those mentioned in 10 13 09 and 10 13 10
- 10 13 14 Waste concrete and concrete sludge
- 17 01 01^a Concrete
- 17 01 02^a Bricks
- 17 01 03 Tiles and Ceramics
- 17 01 07^a Mixtures of concrete, bricks, tiles and ceramics
- 17 02 02^a Glass
- 17-03 02 Bituminous mixtures other than those mentioned in 17 03 01

The following wastes (with their respective List of Waste (LoW) Codes) will be accepted for recovery at the soil washing plant at the former concrete / asphalt production yard:

- 01 04 08 Waste gravel and crushed rocks other than those mentioned in 01 04 07
- 01 04 09 Waste sand and clays
- 17 05 04 Soil and stones other than those mentioned in 17 05 03;
- 17 05 06 Dredging spoil other than those mentioned in 17 05 05;
- 17 05 08 Track ballast other than those mentioned in 17 05 07
- 17 09 04 Mixed construction and demolition wastes other than those mentioned 17 09 01, 17 09 02 and 17 09 03
- 19 12 09 Minerals
- 19 13 02 Solid waste from soil remediation other than those mentioned in 19 13 01
- 20 02 02 Soil and stone from municipal facilities .

Some non-waste (or by-product) material could also be imported for processing at the soil washing plant, potentially including marine aggregates.

2.8.2 Phasing of Landfilling Works

The inert landfill development works at Ballinclare Quarry will progress sequentially from installation of clay liners along the quarry floor and side walls, landfilling upwards to original ground level, with levelling and restoration of the final landform thereafter. Cross-sections through the completed landfill are presented in Figure NTS-6. A plan showing the final landform for the inert landfill, on completion of final restoration to original ground level is provided in Figure NTS-7. The works will progress initially from west to east and up to 60mOD in Phase 1A, extend further upwards thereafter to 80mOD in Phase 2 before then turning southwards to fill over the former processing / production area in Phase 3 (as shown in Figures NTS-8 and NTS-9).

Each of the landfill phases will be developed by initially placing a 1m thick layer of uncontaminated low permeability material across the quarry floor to form the basal liner. The liner would not have to cover the whole basal area of any given development phase to allow the placement of inert waste. A minimum area of liner would however have to be

determined to ensure that there is sufficient space to allow road trucks and landfill plant to operate.

As the basal area fills with inert waste, the installation of the basal liner would then progress in line with the importation of suitable low permeability materials. Once the basal extent of the phase has been reached, then the installation of the steepwall liner to the walls would be progressed and the open face of the inert waste would be sloped back at a suitable gradient. For the purpose of the phasing drawings, waste slopes of 1v:2h have been assumed.

Such an approach reduces the volume of low permeability clay lining material required to be imported to the facility initially. During the operational life of the facility, the lining system may be installed as suitable clay materials are imported or, alternatively, it could be stockpiled, to be placed on a campaign basis by site-based personnel or by a Contractor.

As indicated on the phasing drawings, by working in this way, it will be possible to provide for progressive restoration of the former quarry void from an early stage in the proposed development. This will improve the landscape and visual characteristics of the site and the early establishment of vegetation will reduce the potential volume of suspended solids carried in surface water run-off.

2.8.3 Processing and Recovery of C&D Wastes

The recovery of C&D waste will be undertaken at the proposed waste recovery shed on an intermittent (or 'campaign') basis, according as waste material accumulates in unprocessed stockpiles and demand for recycled product dictates. Recycling activities will produce a particulate, granular aggregate conforming to standard industry specifications and End-of-Waste criteria set by the EPA and it is envisaged that they will most likely be re-used in construction of foundations for roads or external pavements.

The size of unprocessed waste stockpiles will therefore vary according to availability of C&D waste, the stage of recycling operations and/or the demand for the finished recycled aggregate product. It is estimated that up to 6 months intake of C&D waste (i.e. up to 25,000 tonnes) could be stored at the recovery facility at one time. The external waste stockpile height is likely to be between 6m and 8m high.

Construction and demolition waste held in 'unprocessed' stockpiles is recovered by excavating it using a loading shovel / front-end loader and tipping it into a mobile crusher within the proposed recovery shed in order to produce recycled (secondary) aggregates of varying nominal size.

The recovered / recycled aggregates are then transferred by loading shovel / front-end loader from production stockpiles at the crusher to 'processed' stockpiles at a separate outdoor stockpiling area, also on a hardstand surface. They are then stored on-site pending their subsequent sale and export off-site. As with unprocessed waste, it is estimated that 6 months output of recovered / recycled aggregates (i.e. up to 25,000 tonnes) could be stored at the recovery facility at any one time and that it is likely to be of a similar height to that of the unprocessed stockpile (i.e. 6m to 8m).

The recovered / recycled (secondary) aggregate is transferred from processed stockpiles to HGVs using a loading shovel / front-end loader on an ongoing, intermittent basis as demand for recycled aggregates dictates.

As all imported waste is required to be sorted and segregated at source, before being brought to the waste recovery facility, it is expected that only minimal sorting of waste materials other than separation of reinforcement from concrete and the removal of occasional inclusions of wood, metal, plastic, etc. will be undertaken at the recycling facility. Reinforcement (and other physical inclusions) separated from concrete will be stored in skips at the recovery area or transferred to the quarantine facility and then removed off site by an authorised waste collector.

2.8.4 Soil Washing Activities

A proportion of more granular (i.e. more sandy / gravelly) soil / claybound C&D intake to the proposed facility at Ballinclare Quarry will be diverted from disposal at the inert landfill facility and submitted for recovery of construction grade sand and gravel at the soil wash plant to be set-up in the south-eastern corner of the application site (at former concrete / asphalt yard).

Selected soil waste intake will be fed by front end loaders from end-tipped stockpiles to the washing plant. Thereafter, the material will be washed and screened. Small stockpiles of sand and gravel aggregate recovered from the washing process will build up at the end of conveyor arms and will be temporarily transferred to larger stockpiles around the former production yard, pending subsequent removal off-site by hauliers.

The expected throughput at the soil washing plant is likely to average around 300,000 tonnes per annum and feedstock will comprise a mix of waste and by-product soil materials, albeit these would have to be processed and managed separately to ensure full and appropriate waste traceability. It is estimated that up to 75% of the throughput materials could be recovered for re-use as aggregate with the balance consigned, as pressed filter cake material or dewatered sludge material, for disposal at the adjoining inert landfill facility. Processing this average volume of soil annually would generate approximately 225,000 tonnes of construction grade aggregate for off-site export and 75,000 tonnes of filter cake material for disposal at the adjoining inert landfill facility.

Soil washing activities will continue in operation up to the end of the Phase 2 landfilling activity, at which time the soil washing plant will be decommissioned and removed off site in order to facilitate the final phase of landfilling across the former concrete / asphalt production area. Any associated infrastructure or materials stockpiles will also be removed and the underlying concrete slab broken up for recycling at the adjoining C&D recycling facility.

The waste recycling activities will not generate any additional traffic over and above that generated by the intake of waste / by-product materials as a backloading system will be used to ensure that recycled materials are dispatched to destination sites using outbound HGV's (which would otherwise depart the site without a consignment / load).

2.8.5 Duration of Activities

Assuming a combined total intake of 6,500,000 tonnes of material to be required at the proposed development, to be imported at a projected maximum (combined) intake rate of 550,000 tonnes per annum with the entirety of such intake directed to the inert landfill, landfilling activities could be complete in a minimum of 10.5 years.

Given the focus on maximising materials recovery and re-use, this scenario is unlikely to occur and it is envisaged that, on average, between imported inert waste, filter cake material generated on site and soil by-product materials used for landfill engineering purposes, the average intake to the landfill will be of the order of 300,000 to 350,000 tonnes per annum. This in turn suggests an operational lifespan of between and 18.5 and 21.5 years for the proposed landfill facility.

It is anticipated that the construction and demolition (C&D) waste recovery (crushing and screening) activities will continue for the duration of landfilling activities at the former quarry void. The rate of C&D waste recovery is not expected to exceed 50,000 tonnes per annum. As previously noted, soil washing and aggregate recovery activities will cease in advance of the final phase of landfilling across the former concrete / asphalt yard.

2.8.6 Working Hours

It is intended that the weekday operating hours for the proposed development will be the same as those in the planning permission previously granted for quarrying at the application site (Wicklow County Council Planning Ref. 14/2118), between 08:00 hours and 18:00

hours, Monday to Friday . In line with the previous planning permission, it is envisaged that that loading and unloading of lorries will take place from 7am each working day.

In response to feedback from the public consultation Kilsaran has given a commitment that no work other than general housekeeping (site management) activities and plant maintenance will take place on site on Saturdays. The facility will be closed on Sundays and Public / Bank Holidays.

2.8.7 Employment

The proposed backfilling operations will require a minimum of six personnel to be based at the facility at all times during working hours. When operating at full capacity, up to 15 people could be employed at the facility (depending on the number of ongoing activities).

One individual will be nominated as the facility / site manager and will be required to

- (i) check that the soil and stone / C&D waste imported to the facility for recovery / recycling or landfilling has been pre-approved for intake and/ complies with waste acceptance criteria;
- (ii) collate and maintain records of waste intake and
- (iii) manage the environmental monitoring and reporting programme.

Other staff will be required to

- (i) be in attendance at the weighbridge office to weigh HGV's in and out for the facility;
- (ii) operate the site plant and equipment at the inert landfill facility on a full-time basis (such as a bulldozer or mechanical excavator) as required;
- (iii) visually inspect and monitor the suitability of the inert soil and stone waste being accepted and placed at the facility;
- (iv) oversee the intake of C&D waste at the waste recovery area on an ongoing basis; and
- (v) manage the processing, handling and C&D recovery activities on an intermittent, campaign basis, as required;
- (vi) oversee the dispatch of recycled aggregates off-site, to an ultimate end-use which is permitted by EPA End of Waste criteria.

In addition to the full-time site-based staff, it is envisaged that operatives and drivers travelling to and from the development will also share the established staff welfare facilities at the site.

2.8.8 Environmental Controls and Monitoring

A number of environmental controls will be implemented during the landfilling and C&D waste recovery operations in order to reduce and minimise potential environmental emissions and any associated nuisance.

The Applicant / Facility Operator will (re-)establish an environmental management programme to monitor and manage environmental emissions arising from the proposed landfilling / C&D waste recovery activities, in line with any requirements in a grant of planning permission and/or EPA waste licence. Pre-existing and/or proposed monitoring locations are identified in Figure NTS-10.

Environmental sampling, monitoring and testing will be undertaken by the Applicant on a regular basis. Records of environmental monitoring and testing will be held on-site and forwarded to the EPA and Wicklow County Council at regular intervals.

2.9 Post Closure Restoration and Aftercare

2.9.1 Inert Landfill Facility

As previously noted, the former quarry void is to be restored to a landform which substantially reinstates that which existed prior to development and merges into the surrounding landscape. It is envisaged that the proposed landfill development will entail

backfilling and restoring the existing void in a progressive manner, working in phases from west to east and turning southwards thereafter to backfill over the former processing / production area.

As working areas are progressively landfilled to within 1 metre of the final ground level envisaged by the restoration scheme, a cover layer comprising 150mm of topsoil and up to 050mm of subsoil will be placed above the inert soil and stone waste. The soil cover layer will initially be seeded with a grass mix in order to promote stability and minimise soil erosion and dust generation. On completion, the backfilled quarry lands will be returned to a native woodland habitat. The proposed final landform and planting scheme is indicated in the long-term restoration plan in Figure NTS-7.

Topsoil and subsoil will be imported to the site on a continual basis and shall not be used immediately in landfilling / restoring the former quarry. The topsoil and subsoil shall be stockpiled separately within the former quarry footprint, away from the active landfilling area and in such location and manner as not to create any temporary adverse visual impact or dust nuisance. These materials will then be used on an ongoing basis in the progressive restoration of the former quarry, as the upper surface of the landfill body approaches the proposed final ground level.

On completion, any rainfall over the landfill footprint will either

- (i) percolate directly into the backfilled soil mass (depending on the permeability and/or degree of saturation of the soil at the ground surface);
- (ii) run-off over the restoration surface (without coming into contact with the underlying inert waste) and be collected by surface water channels which will carry it to the settlement ponds and/or wetland area (or to the separate swale / attenuation pond feature on the western flank of the backfilled quarry). It will then be discharged off-site to the Ballinclare Stream and Potters River.

Locally, in the south eastern corner of the landfill area, the final restored ground levels will be lower than the discharge point to the Ballinclare Stream and cannot therefore drain to it under gravity. Accordingly, it is envisaged that surface water run-off from this area will collect at a swale / attenuation pond to be constructed close to the south-eastern boundary. Discharge from the swale will be to a minor (unnamed) stream which flows for 300m parallel to the L1157 Local Road and into the Kilmacurragh Stream, which in turn flows into the Potters River approximately 400m further downstream.

The long-term surface water management regime for the backfilled landform, will be established incrementally over time, as landfill and restoration works proceed. On completion of the quarry backfilling and restoration works, any outstanding long-term site drainage works will be completed.

2.9.2 C&D Waste Recovery Facility

On cessation of C&D waste recovery activity at Ballinclare Quarry, any remaining stockpiles of unprocessed C&D waste will be crushed and added to processed waste stockpiles. These stockpiles will in turn be gradually run down as recycled (secondary) aggregate is sold to the market.

The waste recovery shed will be dismantled to ground / foundation level and, insofar as possible, all structural elements (steelwork, wall cladding wall panels etc.) will be recycled and/or recovered. All processing plant and machinery will be removed off-site and any related site infrastructure will also be decommissioned and/or removed off-site as appropriate.

Any paved or hardstanding surfaces around the C&D waste recovery area will be excavated in phases as space is freed up and will be processed / recovered on-site and sold to market. If a residual volume of processed aggregate remains at the end, it will be either be used in

final restoration works around the application site or transferred to another C&D waste recovery facility off-site.

As the paved or hardstanding surfaces are excavated and recycled, a replacement cover layer comprising a combined 150mm of topsoil and up to 500mm of mineral subsoil will be placed over exposed in-situ soil. This material will most likely be imported (as non-waste) from construction sites.

The upper surface of the reinstated ground around the recovery area will be graded so as to ensure that any surface water run-off falls to drainage channels which will run north-westwards, toward the wetland area. The area will then be seeded with a native grass mix and will most likely evolve to a seasonal grassland habitat over time.

3.0 EXISTING ENVIRONMENT, EFFECTS & MITIGATION

3.1 Population and Human Health

Environmental Protection Agency guidelines in relation to Environmental Impact Assessment (2022) indicate that the consideration of human health and population in EIA should address employment, human health and amenity issues, as well as opportunities for enhancement of wellbeing.

The application site at Ballinclare Quarry is located in County Wicklow and straddles the townlands of Ballinclare and Carrigmore. It is located in the Electoral Division of Dunganstown West. Population centres in the vicinity of the site include the village of Kilbride, approximately 2.5km to the south-east and the village of Glenealy approximately 2.5km to the north. There are several isolated residences and farmsteads located along the local road network around the application site.

Ordnance Survey maps, aerial photography and planning documents from Wicklow County Council were examined to identify any issues of specific local concern. The Applicant undertook a pre-planning consultation exercise with the local community at which the majority of comments / concerns raised by local residents were in relation to increased traffic volumes and inherent safety risks to the local community perceived to arise as a result. Concerns regarding specific environmental emissions have been addressed in relevant environmental assessments, such as those for air quality and noise

A study area extending to a 1 km buffer radius from the application site boundary was chosen to identify sensitive residential and other community receptors. CSO census information from 2016 and 2022 for Dunganstown West Electoral Division (ED) was used to obtain representative demographic information (in relation to population, health and economic activity). Data from the surrounding EDs, County Wicklow and the State was considered in order to enable a comparison of demographic trends in the local area with wider regional and national trends.

The closest Social Welfare Office to the application site is located in Wicklow Town, Co. Wicklow and statistics from there indicate that employment figures have been broadly stable since about the third quarter of 2018. It is considered that the proposed development will have a positive effect on employment. During the construction and operational phases, the waste facility will provide employment for a workforce of at least 6 people (on a full time equivalent (FTE) basis). The development will also indirectly support and sustain employment for hauliers in the construction and development industry, as well as providing occasional employment for sub-contractors, maintenance contractors and environmental monitoring personnel and advisors as required. This employment effect will cease once the site is restored.

It is considered that the proposed development is not likely to have significant effects on human health. The main potential pathways for effects on human health arising from proposed recovery / recycling and landfilling activities at the application site are noise, dust and groundwater. Measures will be put in place to prevent fugitive dust emissions, to mitigate noise impact, to prevent spillages of fuel and prevent the intake of non-inert, potentially contaminated or suspect wastes which could adversely affect groundwater quality in the underlying (poor) aquifer. With appropriate mitigation measures in place, it is considered that potential adverse health effects are unlikely to occur.

On cessation of landfill and recovery operations, any noise or air quality effects would largely cease once the application site is restored to native woodland use. Long-term effects on groundwater will be avoided by the construction of the inert landfill liner and by implementing precautionary measures around waste intake to the landfill during the operational phase.

As part of the proposed development, monitoring will be undertaken in relation to noise, dust, surface water and groundwater. This will measure the actual impact of the development during the site preparation, operational and post closure phases.

Kilsaran is committed to ensuring open communication is facilitated throughout the lifetime of the development to enhance community relations and ensure that concerns are addressed promptly.

It is anticipated that a community benefit fund will be established under the auspices of the Planning Authority should planning permission be granted for the proposed development. This will have potential to create opportunities for health and wellbeing initiatives in the local area around the application site.

3.2 Biodiversity

Extensive desktop and ecological field surveys were undertaken between December 2023 and September 2024 in order to establish a robust baseline assessment of ecological conditions at and around the application site. The ecology team were a core part of the design process for the proposals to ensure that opportunities for long term enhancement of the biodiversity value of the site could be maximised through the lifetime of the project and on final restoration.

The application site predominantly comprises previously disturbed land, a former quarry used for the extraction of diorite with an extraction void extending to 17.2ha, as well as a former concrete / asphalt production yard, a paved concrete area to the west of the site access road, established site buildings and infrastructure and a pre-existing water management system, comprising a series of attenuation and settling ponds.

The application site does not lie within any EU Natura 2000 site or nationally designated site. The closest of the European designated sites is Deputy's Pass Nature Reserve Special Area of Conservation (SAC) (000716), located c.1.6km from the application site. On examination of potential links between the application site and designated sites, potential connectivity was only identified for one European site at Buckroney-Brittas Dunes and Fen SAC (000729). The Qualifying Interests (QIs) of this SAC are a range of dune, saltmarsh and alkaline fen habitats. The remainder of any nearby Natura 2000 sites are screened out from further consideration because of the scale and location of the proposed development site, the nature of the Qualifying Interests, Special Conservation Interests (SCIs) and Conservation Objectives of these sites, distances involved and lack of credible ecological pathway for significant effects to be transmitted.

A NIS accompanying the current application considers the potential impacts of the proposed development and concludes that with the proposed implementation of design and mitigation measures there will be no impacts on the Buckroney-Brittas Dunes and Fen SAC.

Much of the proposed site infrastructure and soil recovery plant will be accommodated within low-value man-made habitats around the former concrete and asphalt production yard in the south-eastern corner of the application site. The proposed C&D waste recovery facility will be established within the footprint of an existing paved area immediately west of the existing access road.

The woodland and scrub areas on site and along the L1157 were found to support a relatively diverse bat community. However, no active bat roost was recorded within the application site. A number of bat roosts with multiple species are known from the wider locally area. The felling of trees and clearance of vegetation has the potential to locally reduce the foraging and commuting resource value of the site by bats but there is a considerable amount of suitable foraging and roosting habitat for bats in the immediate area around the proposed development site. Any temporarily or locally displaced bats are likely to successfully disperse into the surrounding area.

In the absence of appropriate design and/or mitigation there is potential for disturbance and displacement of the nesting Peregrine Falcon at the site. However, it was decided at an early stage in the project design to retain an area of cliff-face specifically to encourage the continued usage of the site by the species. The finished infill level will leave a cliff-face of up to 15m in height at the northern boundary of the facility. In the absence of appropriate landscaping and mitigation there is the potential to make the site unattractive for nesting Peregrine Falcon. Peregrine Falcons are relatively tolerant of the operation of plant and machinery and this is reflected in their successful colonisation of active quarries throughout Ireland.

The watercourses in the vicinity of Ballinclare Quarry, have been surveyed and shown to support high conservation aquatic species, namely brown trout, lamprey (*Lampetra sp.*), European eel, smooth newt, nationally scarce water-stick insect and Red-listed (vulnerable) moss bladder snail. Smooth newt also recorded from the settlement ponds within the site boundary. Best practice water management at the proposed development will be implemented, in particular in relation to control of sedimentation, to ensure that aquatic habitats are protected. Ongoing monitoring will ensure that the measures are effective and will identify if any remedial actions are required.

Retention of existing settlement ponds and creation of a wetland area will create a habitat attractive for aquatic species such as newts and frogs, as well as foraging bats. Bird and bat boxes and nesting opportunities for peregrine falcons and sand martins will be provided as part of the proposals to encourage further opportunities for wildlife. The grassland areas at the west of the site will be managed according to the recommendations of the All-Ireland Pollinator Plan to encourage grassland species diversity.

With the implementation of the biodiversity mitigation and enhancement measures it is likely that there will be net positive results for local biodiversity, particularly with the maturation of the progressively restored native woodland.

3.3 Land, Soils and Geology

The assessment of the likely environmental impact of the proposed materials recovery / recycling facility and inert landfill at Ballinclare Quarry on land soil and geology is based on a desk study of the application site and surrounding area involving published geological data, a site walkover of the lands and available ground investigation information, including borehole investigation records from the site.

The application site principally comprises an existing quarry where soil cover and the underlying subsoil have previously been stripped and removed over a significant proportion of the area to facilitate the extraction of the underlying rock and its use in the production of construction materials.

The proposed inert landfilling and waste recovery activities at the application site will be largely confined within the existing development footprint. The proposed constructed wetland area which will be developed to treat surface water run-off from the inert landfill land and C&D waste recovery facilities will be located in an area in the south-western corner of the application site which currently hosts the existing settlement ponds and an adjoining area of wet and/or improved agricultural grassland.

The Irish Soil Information System (ISIS), identifies the soil association around the application site as the Clonroche Soil Association (ISIS Code 1100a), described as a fine, loamy drift with siliceous stones. These soils are naturally moderately draining and are considered to have good agricultural potential. Although soils have been removed across much of the application site and former development footprint, some are likely to remain in place around the south-western corner of the site, in grassland areas adjoining the existing settlement ponds. They comprise glacial till derived from lower Palaeozoic sandstone and shale. There is alluvium mapped along the channel of the Potters River to the north of the application site.

Some of the stripped soils are likely to have been used to create the perimeter screening berms around the application site.

The quarry at Ballinclare is entirely developed within a Silurian diorite. The diorite is massive, and contains veins associated with interpreted shear zones. Extraction activity at the quarry was suspended after a thin vein of naturally occurring asbestos was exposed within the diorite at the quarry. This vein exposure has been contained and the associated risks to human health have been deemed by the Health and Safety Authority (HSA) to be acceptably low. Karstification does not occur in diorites and no karst features are recorded in the vicinity of the quarry.

Kilmacurra Quarry, c 500m south of Ballinclare quarry is a County Geological Site. It is not within the footprint of the proposed development and will not be affected by the proposed development.

During the construction / site preparation stage, the only direct impact on land and soils will be the disturbance and loss of any existing soil cover across the planned ICW area in the south-western corner of the application site. The soil is considered to be of low value and unlikely to be suitable for many uses. Much of the stripped soil will be re-used to create the ICW area and re-integrate it into the surrounding landform. Any excess soil materials will be temporarily stockpiled pending their re-use in the restoration of the landfilled landform. Any pre-existing berms around the western or southern site boundaries will remain in place for the duration of the proposed development and will not be excavated for incorporation into the final restored landform at the inert landfill.

There is currently no risk to public health posed by naturally occurring asbestos, as it tightly bound within the host rock formations at Ballinclare. The proposed development will provide for an engineered (natural clay) liner at the base and sides and the backfilling of the quarry void using imported soil and stone. This should provide further reassurance to the general public and remove any cause for concern in respect of the long-term health risk associated with the naturally occurring asbestos within existing rock exposures.

The diorite exposures are of high heritage importance at a local level and provide an opportunity to examine the rock in situ.

The potential for progressive re-establishment of soil as a growth medium for the native woodland plantation and its value as a carbon sink are noted as a medium to long term positive impact. A number of mitigation measures will be implemented for the duration of the landfilling and recovery activities to minimise any adverse effects on soils, subsoils and bedrock geology surrounding the application site. These measures will principally be focussed on prevention of potential fuel / oil spills which could arise on site as a result of plant refuelling activities, inadequate plant inspection and/or maintenance, plant or vehicle collisions or poor storage arrangements for hazardous substances etc.

Detailed procedures will also be implemented to minimise the risk of importing and introducing non-inert and potentially contaminated soil / subsoil and C&D waste to the application site. Management systems will be introduced to establish the source of imported materials in advance and to confirm that they are inert. Once accepted at the site a multiple level soil testing regime will be implemented which will test the intake materials for compliance, in line with established EPA practice.

Site activities will be monitored to ensure all landfilled soils are placed at safe slope angles and comply with all relevant Health and Safety legislation and guidance published by the Health and Safety Authority guidelines for the extractive sector, thereby limit the potential for instability / unplanned events.

3.4 Water

This receiving water environment at, and in the immediate vicinity of, the application site at Ballinclare Quarry is characterised on the basis of a comprehensive review of published information, numerous site visits and inspections, extensive site investigation (drilling), monitoring data for groundwater quality / levels, surface water quality and collation and analysis of the information gathered, including:

- Several phases of drilling investigations and bedrock logging and bedrock coring;
- Various local well surveys to provide information on domestic wells within the vicinity of the quarry;
- Historic and recent groundwater quality sampling;
- Surface water drainage surveys to characterise the local drainage patterns;
- Historic and recent surface water quality monitoring upgradient and downgradient of the Application site (water quality and aquatic biology monitoring);
- Surface water quality analysis of quarry discharge water; and,
- Seasonal and continuous groundwater level monitoring in on-site and off-site water wells.

The Potters River is located to the north and east of the site, c. 300m from the site at its closest point. The Kilmacurra Stream is c. 200m south of the site. The quarry lies entirely within the Ovoca-Vartry Catchment, which is in the Eastern River Basin District. Surface water quality in both rivers is moderate but indicated to be at risk of deteriorating.

The Potters River flows south before discharging to the Irish Sea near Potters Point, approximately 7km from the application site. There is an SAC / pNHA at this location, identified as the Buckroneys-Brittias Dunes and Fen SAC and pNHA (000729). These sites are not designated for any related hydrological / hydrogeological interests or characteristics.

Surface water quality at the Application site is broadly good. Contemporary water quality results demonstrate good quality water, with the exception of elevated Arsenic at one sampling location (SW6) during one sampling event.

Based on the available data, the Hydrogeological Conceptual Model characterises the quarry and the surrounding area as dominated by shallow groundwater flow through the relatively permeable subsoils and subsoil-bedrock interface. The underlying Diorite bedrock has low permeability, due to its relatively tight crystalline structure and as such is classified as a Poor Aquifer by the Geological Survey of Ireland. The available data indicates there are two groundwater flows systems locally:

- The shallow flow which occurs across the top of the bedrock and which is driven by recent rainfall recharge.
- A deeper, less connected, local flow within fissures and fractures in the Diorite bedrock.
- The shallow flow is the dominant groundwater flow in the area, and this dominant system is also likely the main source of inflow to many of the local groundwater wells.
- The shallow flow system follows topography, with flows from the west, and to the south, and away from the quarry on higher ground to the north.
- The deeper groundwater flow is limited by recharge (i.e. the amount of rainfall that actually enters the bedrock flow system), and likely follows the river drainage pathways and flows to the east-southeast.

Flood mapping published by the Office of Public Works indicates that there is no fluvial (river-related) flood risk arising at the application site from the Potters River. The published maps do however indicate that small areas in the vicinity of the application site may experience pluvial (rain related) flooding in areas of overland flow and ponding. As the

discharge flow to the Potters River constitutes a very small proportion of likely larger flood flows, it will not significantly contribute to or affect downstream flood flows.

Water is supplied to existing toilet, hand washing and welfare facilities from an existing groundwater production well on-site. Drinking water is not sourced from this well however and bottled drinking water is delivered to the site on a regular basis, as required. Wastewater from the site offices and staff welfare facilities is piped to an existing on-site effluent treatment system which previously approved and installed under the 2014 quarry planning permission. A sub-surface concrete wastewater holding tank will be installed as part of the proposed development to supplement existing capacity during busy periods when extra staff are based on site.

Careful consideration of all water receptors has been undertaken in the EIAR, and all phases of the proposed development have been considered in terms of potential to impact on the water environment. The baseline study identified the following sensitive hydrological / hydrogeological (water) receptors within the receiving environment:

- Surface Water - Potters River
- Groundwater - good quality, poorly productive diorite bedrock aquifer
- Groundwater - nearby domestic and agricultural local groundwater supply wells

Water quality in the Potters River will be maintained and protected during all phases of the proposed development. This will be undertaken by implementing the following:

- Dewatering of the quarry is ongoing and monitoring of that process demonstrates very high compliance with existing Discharge Licence requirements.
- A detailed water management plan has been designed for each phase of the proposed development. Water management and water treatment proposals are designed and scaled for each phase and each activity, including:
 - Dewatering of the quarry void
 - Management of surface water run-off
 - Groundwater protection
 - Soil washing plant for recovery of secondary aggregates
 - Wastewater management
 - Site water supply
- Strict material testing and inspection protocols will be implemented to ensure the material received by the facility is inert.
- The infilled areas will be progressively landscaped and as a result the area of contact with infill material will be reduced over time.
- A monitoring programme will be implemented to demonstrate compliance with Waste Licence requirements.

Buckroney-Brittis Dunes and Fen SAC / pNHA is located a considerable distance downstream of the application site, therefore the potential for site operations to effect groundwater or surface water quality over those distances is negligible. In addition, there are several other factors, such as topography and changes in geology that diminish further any potential effects on groundwater quality or groundwater flows. As outlined, surface water controls that will be implemented at the application site will ensure protection of water quality in the Potters River through all phase of the proposed development. As a result, there will be no significant potential to effect water quantity or water quality that flows down the Potters River towards Buckroney-Brittis Dunes and Fen SAC / pNHA.

Protection of groundwater quality and groundwater resources will be implemented during all phases of the proposed development. This will be undertaken by implementing the following:

- Dewatering of the quarry is ongoing and monitoring of that process demonstrates very high compliance with Discharge Licence requirements.
- There has been no observation of drawdown in any local wells associated with ongoing dewatering of the quarry.
- A detailed water management plan has been designed for each phase of the development. Water management and water treatment proposals are designed and scaled for each phase and each activity.
- Strict material testing and inspection protocols will be implemented to ensure the material received by the facility is inert.
- The local bedrock is classified as a poor aquifer.
- All local houses have their own groundwater well. Some properties have more than 1 well.
- To ensure protection of groundwater quality an engineered clay liner will be installed underlying the waste material being infilled in the quarry. This clay liner will have sufficient low permeability (at least $1 \times 10^{-7} \text{m/s}$) so as to hydraulically isolate it from the underlying bedrock aquifer.
- Mitigation and drainage controls are proposed in respect of hydrocarbons, and wastewater from welfare facilities at the application site.
- A groundwater monitoring programme will be implemented at the application site, and in local wells around the application site, to confirm that there is no adverse impact on groundwater level or quality over time, as activities proceed. The scope and frequency of groundwater sampling and testing will be set by any EPA waste licence issued in respect of the proposed waste recovery activities.

In terms of residual impacts, it is considered that with mitigation measures in place at the proposed facility, there are no significant residual impacts with respect to groundwater and/or surface water during the construction, operational or post-construction stages and that the proposed development will not result in any likely, significant effect on groundwater and/or surface water, wither in terms of water quantity or water quality.

A range of potential cumulative impacts on the water environment have been assessed, and none are considered to be significant.

The scope and frequency of groundwater sampling and testing will be set by any EPA waste licence issued in respect of the proposed waste recovery activities. Preliminary monitoring locations are identified in Figure NTS-10.

3.5 Air Quality

The principal air quality impact associated with the operation of the materials recovery / recycling facility and inert landfill at Ballinclare Quarry is fugitive dust emission. Dust emissions are likely to arise during dry periods from

- decommissioning of infrastructure associated with former rock extraction and aggregate, concrete and asphalt production activities at the site;
- site preparation works including clearance / construction at the wetland treatment area, construction of the C&D waste recovery shed, installation of surface water drainage infrastructure and upgrading of internal access roads;
- trafficking by HGVs over unpaved soil surfaces;
- end-tipping handling and stockpiling of soils / claybound C&D wastes (and by-products) at and around the soil washing plant;
- end-tipping, handling, processing / crushing and stockpiling of C&D waste at the waste recovery facility ;

- end-tipping, handling and stockpiling of inert waste materials and by-products at the landfill facility (principally soil and stone) ;
- ongoing placement of small quantities of aggregate for internal haul road construction across landfilled soils.

Dust emissions from the soil washing plant are likely to be low emissions due to it being a partially enclosed system and principally involving a wet process.

Given the inert nature of the materials being imported for landfilling / C&D waste recovery purposes and the absence of biodegradable (organic) wastes, no landfill gas emissions will arise from the proposed waste activities at Ballinclare Quarry.

At 4 No residential properties around the application site and an amenity forested area immediately to the north of it, the unmitigated impact of dust emissions is assessed to be slight to moderate adverse. In light of this, and in order to control potential dust rise and dust emissions, a number of measures will be implemented at the proposed development, principally

- minimising drop heights when handling materials;
- minimising work in adverse / windy conditions;
- protection from wind during site activities;
- locating haul routes away from sensitive receptors;
- Increasing dust suppression activity (sprinklers / water sprays from tractor & bowser) as required;
- spraying of water from a tractor drawn bowser on unpaved haul roads and/or exposed soil surfaces and soil / C&D waste stockpiles, particularly during windy periods and/or dry spells;
- carrying out C&D processing activities inside the proposed waste processing shed;
- planting the upper restored surface with grass as soon as possible after placing cover soil in order to minimise soil erosion and dust emissions;
- restricting the speed of HGVs / articulated trucks within the facility;
- routing all egressing traffic through a wheelwash facility and over the paved section of the access road thereby removing and/or dampening any dust / mud material attaching to the undercarriage and preventing transport of fine particulates off-site, onto the local public road network;
- retaining existing perimeter screening berms and maintaining any planting thereon;

In the unlikely event that future dust monitoring was to indicate that dust emissions are excessive or problematic, consideration could also be given to installing an automated sprinkler system along site roads and/or site boundaries to dampen any lying dust. Consideration could also be given to paving additional length of access road leading to the C&D waste recovery facilities.

With the implementation of the mitigation measures outlined above, the impacts of dust related impacts at the nearest residential properties are reduced to insignificant to acceptable. Following completion of the final site restoration works and the return of the application site to native woodland, there will be no long-term adverse impact on air quality.

The proposed development will have an insignificant dust deposition impact on the Deputy's Pass Nature Reserve SAC and the Glenealy Woods pNHA ecological sites. Traffic levels generated by site activities will have negligible impact on local air quality and negligible impact on the concentration of fine particulates (airborne PM₁₀) beyond the development boundary.

An air quality / dust monitoring programme will be implemented at the application site to confirm that recovery / recycling and landfilling activities at the site operate within the dust

deposition emission limit values set out in any EPA waste licence issued in respect of proposed waste facility. Preliminary monitoring locations are identified in Figure NTS-10.

3.6 Climate

An assessment of potential climate impact has been undertaken having regard to the evolving baseline, climate hazards, project vulnerability and greenhouse gas (principally carbon dioxide, CO₂) emissions. The assessment identified climate change concerns in relation to proposed development, assessed effects and identified mitigation measures where possible. It also had regard to the likelihood and exposure / vulnerability of the proposed development to climate hazards, both now and in the future, and included a climate hazard impact analysis.

The project is not considered to be particularly vulnerable to climate change events, although some consideration will be given to reducing vulnerability and improving resilience to extreme rainfall events, potential localised flooding, storms and high winds.

Based on the scale and extent of the proposed development and waste related activities at Ballinclare Quarry, greenhouse gas emissions are assessed as not significant in context of existing national emission levels. Measures will be implemented to assess and/or monitor greenhouse gas emissions and to reduce these wherever practically possible. Relevant measures incorporated into the current development proposals include

- (i) the planned fitting of roof-mounted solar panels at the C&D waste recovery shed as a source of renewable energy for the facility and
- (ii) implementation of system of HGV backloading to maximise the number of HGVs trips which are laden on both legs of return journeys to and from the application site.

3.7 Noise

Relevant regulatory and best practice guidance in respect of noise and vibration has been reviewed and appropriate thresholds set out for the protection of residential amenity at noise sensitive locations in the vicinity of the application site.

The nearest noise sensitive locations have been identified and baseline noise surveys conducted to establish prevailing noise levels. Additional consideration has been given to the nearest designated nature sites and ecological conservation areas. The findings of the baseline noise surveys indicate that the prevailing noise climate is dominated by road traffic on the surrounding regional and local road network.

The potential noise impacts arising during the construction phase of the project have been assessed. Under worst case conditions, the predicted construction noise levels will fall below the adopted threshold limit of 65 dB L_{Aeq,12hr} at the nearest noise sensitive locations. Construction noise would therefore be considered to give rise to temporary slight to moderate impacts. Best practice construction noise management measures will need to be adhered to ensure that duration and significance of impacts are minimised where practicable.

The potential noise impacts arising during the operational phase of the project have been assessed. The predicted noise levels presented indicate that even under worst case operational conditions, the relevant operational noise threshold of 50 dB L_{Aeq,T} would be achievable at surrounding sensitive receptor locations, subject to the adherence to best practice noise management practices. The potential cumulative impacts arising from operational site noise has been considered and determined to represent negligible long-term impacts at the nearest noise sensitive locations.

The potential noise impacts of additional road traffic noise levels on the public roads have been assessed. Based on the prevailing noise levels in the vicinity of the nearest noise sensitive locations along the L1157 / Breagura Road, additional heavy vehicle movements during peak hours would be expected to give rise to minor to moderate medium term noise

impacts at a small number of properties. At two properties owned by the Applicant, the potential impacts would be considered to be major and moderate over the medium term. It is noted that outside of peak hours, projected heavy vehicle traffic and associated noise impacts would be lower.

Prior to commencement of works, the Applicant (and any appointed Contractors) will compile and submit a Construction Noise and Vibration Management Plan (NVMP) to Wicklow County Council and the EPA. Measures will focus on physical screening of noise (by berms, stockpiles, rock faces etc.), maintenance of plant and site infrastructure (roads) and management of site activities and site traffic so as to minimise noise emissions.

The Applicant will distribute information circulars informing the local community of the progress of site-based works during the construction phase and will proactively engage with residents in potential noise / vibration sensitive properties before the commencement of any works which would be likely to generate any appreciable levels of noise or vibration, explaining the nature and duration of the works.

Following completion of the final site restoration and the return of the application site to native woodland, the long-term impact of the proposed development on ambient noise levels will cease.

A noise monitoring programme will be implemented at the application site to confirm that activities operate within the limit values set out in any EPA waste licence issued in respect of proposed waste recovery activities. Preliminary monitoring locations are identified in Figure NTS-10.

3.8 Material Assets

The material assets assessment comprises the consideration of existing resources pertinent to the proposed development and the application site that are not addressed elsewhere in the EIAR and the likely development impacts on those resources. On this basis, it includes a review of utilities such as electricity, telecommunications, gas, water supply infrastructure and sewerage, as well as waste management arrangements.

Consultation feedback of most relevance to this assessment is that received from the Eastern-Midlands Waste Regional Authority (EMWRA) and the Waste Management section of Wicklow County Council. EMWRA stated that the proposed development was positively aligned with the National Waste Management Plan for a Circular Economy 2024-2030 and the desired achievement of 0% waste growth over the course of that Plan. The Waste Management section of WCC was also supportive of the proposals, given the lack of existing facilities available in County Wicklow for the disposal of inert soil and stone and the extent of materials that currently originate from Dublin that pass through the county for ultimate disposal in County Wexford. In addition, the ability of the proposed development to reduce the need for virgin aggregates was cited as a notable benefit. The revision to design to include soil washing and increase recovery levels of aggregates since the 2021 SID application was commended.

The proposed development will not introduce any new demand for utility infrastructure and standard construction safety practices will be followed for working close to the existing below and above ground services in order to safeguard supply to local service users and to ensure the health and safety of employees, hauliers and visitors. This will be done in line with statutory obligations under health and safety legislation.

The proposed development at Ballinclare Quarry will comply with all waste management responsibilities prescribed by conditions attached to any future grant of planning permission and/or EPA waste licence.

3.9 Cultural Heritage

The archaeological and cultural heritage assessment undertaken in respect of the proposed material recovery / recycling facility and inert landfill at Ballinclare Quarry comprised a paper / literature review and findings from site visits / fieldwork studies.

The assessment identified a number of features and items of cultural heritage interest and value in the surrounding landscape, although none are known to exist at the application site or immediately adjacent to it. The Recorded Monuments and sites in the Sites and Monuments Record within the study area are identified in Chapter 12 of the EIAR.

The proposed development will have no direct or indirect impacts on any known items of cultural heritage, archaeology or buildings of heritage interest in the application site or the immediate vicinity thereof.

There are a number of areas within the development footprint which have not been subject to significant previous ground disturbance, principally around the proposed wetland area on the western side of the application site. Due to the possibility of the survival of previously unknown sub-surface archaeological deposits around these areas, any soil stripping associated with future development in that location will be archaeologically monitored at the outset of the development works.

3.10 Landscape

A landscape and visual impact assessment (LVIA) of the proposed development at Ballinclare Quarry was completed in accordance with accepted guidance.

The application site comprises a large disused quarry void, a former processing area in the south-eastern corner of the site and a concrete paved area to the west of the site access road, some areas of grassland and scrub (within which settlement ponds are located) as well as substantial tree belts surrounding the site. The site is located in the eastern foothills of the Wicklow Mountains, on the southern side of a low hill and south of the Potters River. It is bound to the west and south by local roads and to the north and east by areas of dense woodland / scrub.

The wider landscape is made up of a mix of agricultural land and blocks of deciduous woodland and conifer plantations. The deciduous woodlands are mostly located near the valley floors, while the conifer plantations are more typical on higher elevations and on hill tops. The agricultural land is made up from small to medium sized fields, most of which are under pasture. Almost all field boundaries are marked by dense hedgerows lined with mature trees. The undulating site boundaries and vegetation covered sections of the application site are characteristic of the surrounding landscape.

A Landscape Assessment undertaken as part of the current Wicklow County Development Plan indicates that Ballinclare Quarry is located within a landscape sensitivity area identified as a "Corridor Area East". This area is described as "The N11 corridor" comprising lands along *"the main transport corridor along the east of the County"*.

The local area is under development pressure due to its proximity to the M11 corridor. The village of Glenealy, approximately 2.5km to the north; Kilbride, approximately 2.5km to the south-east and Barndarrig, approximately 3km also to the southeast are the closest settlements to the application site.

The undulating landscape surrounding the application site, combined with the presence of mature vegetation, significantly reduces its visibility in the surrounding area. All views towards the application site are screened by topography, as well as roadside and intervening vegetation. Dense vegetation along the site boundaries reduces the visibility of the existing quarry to almost zero in views from a close proximity.

Parts of the internal elements of the application site are only visible from sloping land to the south, south-west and west, from elevations above c. 80 mOD to the top of the nearest

ridgeline, i.e. no further than 2 km to the south and west. The available views from publicly accessible areas comprise some partial views from Kilmacurragh Botanic Gardens and from short stretches of local road to the north of Westaston Hill. It should be noted that roadside and intervening vegetation, as well as intervening topography screen part, if not all, of the existing quarry development, in the majority of views from the area within 2km to the south and west. Large parts of this area comprise agricultural land which is not publicly accessible.

The proposed development has been designed to minimise the potential landscape and visual effects. This design included the containment of the development within the existing quarry development footprint and retention of all existing boundary vegetation, which reduces the visibility of the proposed development from local roads and nearby residential properties significantly. Furthermore, the restoration of the landfilled area to native woodland will result in better visual integration of the site into the local landscape, refer to the final restoration and landscaping plan in Figure NTS-7.

The components of the proposed development likely to cause landscape effects are:

- changes to the landform within the existing quarry void, due to the backfilling activities;
- 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 native woodland habitat; and
- the introduction of the wetland treatment area and associated change of land use in the western part of the application site.

An assessment of the landscape sensitivity and scale of change associated with the proposed development concluded that the local landscape around the Ballinclare Quarry is able to accommodate the development and that any landscape effects will be minor / negligible and not significant over the operational stage.

As noted, there are distant, restricted views of the application site from elevated locations approximately 0.5km to the south and 1.5km to the west. These views are principally of the upper quarry face and upper landfilling area, generally above the 50mOD contour. The visibility of these areas of the application site and of any site activities above these levels cannot be prevented in the small number of views from elevated locations. HGV movements along the local road network will also be visible to local road users. An assessment of the visual sensitivity of receptors and the scale of change arising during the operational phase of the development concluded that any visual effects will be moderate and not significant.

For both landscape and visual effects, any limited negative effects at operational stage will reduce to minor / negligible following cessation of the recovery / recycling and landfilling activities and final reinstatement of the site to its original, pre-development landform.

3.11 Traffic

Extractive operations have been carried out at the existing Ballinclare Quarry since before 1963. In 1993 planning permission was granted for the construction of a macadam / asphalt manufacturing plant and in 1995 planning permission was granted for the construction of a concrete manufacturing plant and ancillary works. In 2008 under Planning Reg. Ref. 07/45 permission was granted for retention of, and extension to, the existing quarry for a period of 20 years.

Permission was granted by Wicklow County Council for a further quarry extension and additional site activities, subject to 23 conditions, in January 2016 under Planning Ref. 14/2118. This permission is valid for a period of 25 years and thus expires in 2041. Condition No. 5 of the schedule attached that permission specifies that the combined output from all permitted activities at Ballinclare Quarry is limited to a maximum of 150 No. HGV loads per day.

An assessment of the permitted and forecast future traffic conditions on the local roads network in the vicinity of the Ballinclare Quarry, Kilbride, Co Wicklow was undertaken as part of the EIA for the proposed development. The assessment compares the traffic scenario arising from the current permitted development for extractive operations and ancillary on-site manufacturing activities with that forecast to be generated by the proposed development, which principally comprises operation of, construction and demolition (C&D) waste recovery facilities, and the landfilling and restoration of the existing quarry void.

The traffic assessment is based upon 2024 classified turning count surveys and automatic traffic counter (ATC) surveys of receiving road traffic flows, together with road network and site traffic data collected in relation to previous planning applications in 2007 and 2014 in respect of permitted quarry development. The assessment includes a review of historic, current, permitted and forecast traffic generation arising at Ballinclare Quarry and evaluates the relative influence of same upon the capacity and operation of the receiving road network. The study also examines site infrastructure and access arrangements serving the application site at Ballinclare Quarry.

Baseline network traffic flows are surveyed with the existing quarry closed. From this baseline, the traffic assessment evaluates the potential traffic generation of the pre-existing quarry development and the impact this would have on the local road network. This is then compared with the forecast potential traffic arising from the proposed materials recovery / recycling facility and inert landfill when operating at planned maximum capacity. The traffic assessment identifies how traffic arising from the permitted existing development is accommodated on the local road network and thus how traffic associated with the proposed development can reasonably be accommodated. Where considered appropriate, measures are discussed regarding the management of traffic generated by the proposed development together with local road improvements, road widening, traffic control and other related mitigation measures.

As the proposed development constitutes Strategic Infrastructure Development (SID), a formal pre-application consultation exercise was undertaken with a number of prescribed bodies on the advice / direction of An Bord Pleanála, including TII. Consultations were also held with nearby residents and members of the general public in August and September 2024. Specific feedback provided in respect of traffic and transport effects has been considered and addressed as appropriate in drafting the traffic assessment provided in EIAR Chapter 14.

Insofar as it relates to the generation of traffic, the development proposal provides for site operations that will generate a lesser overall volume of HGV traffic than the quarry, but HGV with similar characteristics to those arising from the operation of that quarry development currently permitted under Planning Ref. 14/2118.

3.11.1 Haul Route

Plate 1 below shows the principal haul route to and from the M11 Motorway associated with the quarry development permitted under Planning Reg. Ref. 14/2118. This is an informal one-way system which includes an anti-clockwise route incorporating Local Road L1113 Coolbeg Road from M11 Junction 18, Local Road L1157 and Regional Road R772 back to M11 Junction 18.

Plate 1
Existing Informal One-way Haul Route Reg. Ref. 14/2118



The Planning Authority acknowledged that the informal one-way haul route had had advantages when the N11 Rathnew to Arklow Road Improvement Scheme was under construction in 2014 but that the traffic patterns on the local roads had changed in the interim such that it was the Planning Authority's preference that the traffic management regime at Ballinclare Quarry should be revised principally to benefit traffic flows locally, and on L1113 Coolbeg Road in particular.

In consultations during the preparation of the previous SID application, (Ref. No ABP-309991-21), the Planning Authority indicated its preference for all HGV traffic to and from the application site to use only the L1157 Local Road with development HGV traffic travelling in both directions. To accommodate the revised regime, it was acknowledged by both Wicklow County Council and the Applicant that road strengthening and widening works would be required on the revised haul route. Such works appropriate to accommodating the passage of site generated HGV are designed and detailed in the drawings that accompany the EIAR in respect of the previous SID application.

In recent consultations in September 2024 and October 2024 relating to the current proposed development, the Arklow Municipal District Senior Executive Engineer has confirmed the above opinion and recommendation to abandon the informal one-way system and has confirmed Wicklow County Council's preference to instead strengthen and improve the L1157 and to use it as the principal haul route accommodating two-way traffic flow, with no development generated HGV using L1113 Coolbeg Road.

Plate 2 below shows the current proposed principal haul route (in pink) leading to and from the M11 Motorway. To accommodate the two-way HGV traffic generated by the proposed inert landfill and C&D waste recovery facility, significant road strengthening and widening works are required. The roadworks effectively include the entire length of L1157 between the R772 and the existing development site access. There are no weight, height or vehicle width restrictions on Local Road L1157.

Plate 2 Proposed Haul Route



3.11.2 Baseline

The existing quarry development enjoys direct vehicular access to Local Road L1157 at a simple priority access for which planning permission has been granted and confirmed under subsequent permissions up to and including the most recent permission.

Local Road L1157 intersects the existing R772 (former N11 National Primary Road) at a priority junction adjacent to the Green Angel Skincare premises (the former Tap Restaurant), located approximately 2 km southeast of the quarry access. The speed limit on the greater receiving road network of local roads is the default rural speed limit of 80kph. It is understood from consultation with the Roads Authority that the speed limit on L1157 will be reduced to 60km/h and this will be implemented before Q1, 2025.

3.11.3 Reception Infrastructure

The existing walled site access was first granted under Planning Ref. 07/45 and subsequently confirmed in the current quarry permission under Planning Ref. 14/2118. The Applicant continues to maintain the hedgerow either side of the site access to ensure that sight distances in both directions are optimised and not obstructed. The existing weighbridge office is located approximately 120m from the site access junction on L1157. There is currently ample linear queuing space for up to 10 No. articulated HGVs.

There are no records of queuing on the public road over the history of the operation of the existing site. It is not proposed to alter the existing access junction to L1157. In the interest of traffic management and the efficient administration of entry to the site, it is proposed to enhance and develop the existing entry regime.

The proposal includes for the assignment of the existing entry lane as a dedicated light vehicle access to be used by those not needing to traverse the weighbridge prior to entry to the works areas. The dedicated light vehicles lane will be segregated from 2 No. dedicated entry lanes for HGV. These HGV lanes will be developed to parallel the existing entry route.

At the northern end of the HGV lanes there will be a new weighbridge. The ordinary queuing capacity of the proposed entry arrangement is in the order of 18 No. articulated tipper vehicles.

3.11.4 Haul Route Condition

When preparing the EIAR for the previous similar SID application under An Bord Pleanála Ref. No ABP-309991-21 there was extensive consultation and engagement between the Applicant and Wicklow County Council's Roads Department including on-site measurement and assessment of the existing and proposed haul route so as to determine suitable strengthening and improvement requirements. In the previous SID application, the Applicant provided Wicklow County Council with a detailed topographical survey of the haul route in digital format together with a detailed road condition survey carried out in June 2015 and engaged in a joint inspection of the proposed haul route. Under An Bord Pleanála Ref. No. ABP-309991-21, the Roads Department ultimately had no objection to the grant of permission for that development.

In preparing an updated traffic assessment study, the Applicant's Engineer carried out a further joint walkover inspection of the proposed haul route with the Arklow Municipal District Senior Executive Engineer in September 2024. In the course of the inspection / survey of L1157, reference was made to the drawings that accompanied the previous SID application. It was agreed that but for some minor additional sections (enlargement of previously identified sections) visually the road did not appear to have degraded structurally since the previous road condition surveys were conducted.

Notwithstanding the observed condition of the haul route, given the passage of time since the previous (2015) road condition survey of the one-way haul route, a new detailed structural analysis of the full length of the L1157 from Ballinclare Quarry to the junction with R772 was undertaken in July 2024. As before, the survey comprises Falling Weight Deflectometer (FWD) testing and a visual condition survey, together with coring of the road pavement.

As with the previous SID application, the Applicant has provided Wicklow County Council with a suite of detailed drawings of the haul route together with a further detailed road condition survey carried out in July 2024. The final suite of road strengthening, road improvement works and other measures are set out in detail in the 'Mitigation Measures' section in Chapter 14 of the EIAR (Traffic).

3.11.5 Traffic Effects

The proposed development does not involve significant construction save for the buildings associated with the receipt and sorting / processing of inert soil and stone and C&D wastes. It is acknowledged that there will also be some site preparatory works which include some final decommissioning and dismantling works for on-site manufacturing plant and equipment. Notwithstanding that these activities will require a greater number of personnel on site, it is highly unlikely that the daily HGV traffic arising will exceed the current permitted 150 No. loads per day nor will it exceed the forecast traffic arising during the operation of the proposed development. The impact arising from the construction and site preparation works is likely to be significantly less than both the current permitted quarry development and the proposed development, accordingly, no specific analysis of general network capacity is considered necessary.

Notwithstanding this and bearing in mind that the road strengthening and widening works to the L1157 are considered by the Roads Authority as appropriate to the opposed passage of large vehicles, it is reasonable to expect that these road improvement works should be substantially completed prior to commencement of construction works on site.

During the operational phase of the development, cumulative maximum intake of 600,000 tonnes per annum constitutes an effective reduction of 200,000 tonnes per annum on the extraction limit permitted in the current quarry permission (Ref 14/2118) and the intake limit sought in the previous (2021) SID application (Ref. ABP-309991-21).

Intake materials / waste will be delivered in a mixture of 8 wheeled tippers with a payload capacity of 20 tonnes and articulated tippers with a payload capacity of 29 tonnes. Based upon empirical data at similar developments the proportional split is 29% rigid 8-wheel tippers trucks and 71% articulated trucks. The average payload based upon a combined sample of 50,000 weighbridge records is 25 tonnes.

The proposed development site is forecast to generate an average of 96 No. HGV trips per day when operating at maximum intake capacity of 600,000t tonnes per annum. This is a reduction of 19 No. HGV trips per day (equates to 16.5%) from the total 115 No. HGV trips forecast in the EIAR for the previous SID application. It equates to a reduction of 54 No. HGV trips, or a 36% reduction in HGV traffic generation from the quarry currently permitted under Planning Reg. Ref. 14/2118.

The proposed backfilling operations will require a minimum of 6 personnel (up to maximum of 15) to be based at the facility during working hours and it is expected these will travel to the facility by car daily.

The Chartered Institution of Highways and Transportation publication 'Guidelines for Traffic Impact Assessment' advises that traffic assessments should examine the potential impacts both positive and negative. The proposed development will eliminate all development generated HGV traffic from L1113 Coolbeg Road. The volume of HGV traffic on the designated haul route along the L1157 will in future be two-way, as opposed to previous informal one-way system. It follows that the level of HGV traffic generation to the L1157 will increase when compared to the one-way scenario (i.e. proposed 96 No. trips is 192 No. movements which exceeds the permitted 150 No. movements).

Since the volume of traffic assigned to the L1157 haul route is likely to exceed the typical 5% and 10% thresholds triggering the need for traffic assessment, a package of mitigation works is proposed. The package of works identified include for a significant road improvement that includes carriageway widening, road strengthening, road overlay, road markings, utilities diversion, roadside drainage improvement and the addition of driver feedback signing to influence driver behaviour and reduce vehicle speeds to the forthcoming 60km/h speed limit which is due to be in place in early 2025 on L1157 and the haul route.

Regional Road R772 is the former N11 National Primary Road and the R772 / L1157 priority junction which was improved and upgraded in recent years and has proven to operate well within capacity even when subject to those mainline flows which have since been displaced and are now accommodated on the M11 Motorway. Given the peak hour development traffic generation of 8-12 HGV trips, the proposed development will not give rise to capacity problems at this junction.

The existing junction of the R772 and L1157 was upgraded and improved by Wicklow County Council in the interest of road safety. The improvement to the junction pre-dates the opening of the M11 Motorway between Arklow and Rathnew (2015) and so would have been upgraded and improved with regard to the considerably higher traffic flows that prevailed on this section of road (N11, R772) up to mid-2015 (approx. 20,000 two-way average daily flow). The design of the junction would also have been required to factor the generation of traffic from the subject development site.

The current permission under Planning Reg. Ref. 14/2118 restricts the total number of loads to 150 No. per day, it does not however restrict the use of the receiving road network and HGV can access the site from any direction. Since acquiring the development site, the Applicant has voluntarily employed an informal policy of HGV traffic following a one-way route comprising L1157 and L1113.

On the basis that the current permitted quarry development application should operate on the understanding that the informal one-way system would be voluntarily enforced, it is assumed for the purposes of the traffic assessments in EIAR Chapter 14 that the permitted

quarry traffic travels on the informal one-way route such that only half of the total permitted 150 No HGV trips are manifest at the junction of R772 / L1157.

The current proposal is to restrict all traffic to the 2 km section of the L1157 between the application site and the R772 and as such, the forecast increase above the permitted quarry as set out in the EIAR is approximately 8-12 No. HGV per hour in one direction (toward Ballinclare Quarry). Without the need for complex capacity modelling, it can be concluded that the impact of the forecast traffic will not have a significant impact above baseline on the capacity of the R772 / L1157 junction.

The other junctions on the haul route are M11 Junction 18 and M11 Junction 19. The volume of traffic throughput at these junctions on the M11 will not alter significantly between the traffic scenario under the permitted Planning Ref. 14/2118 and that arising at the proposed development and it self-evident that the forecast traffic arising from the proposed development would not have a noticeable impact on the operation of these interchanges.

The assessments of traffic flows on the receiving road network include for the baseline scenario which considers the permitted quarry traffic travelling on the informal one-way system. The assessments consider the average daily traffic generation of the proposed development and also consider a sensitivity assessment using a value +50% higher than the average. A further test scenario is considered where the permitted quarry is assumed to abandon the one-way system in favour of using the L1157 as a two-way haul route.

Due to the proposed alterations to the haul route, the HGV traffic generated by the proposed development will redistribute to the local road network. In the year of opening 2026 this benefits the L1113 Coolbeg Road reducing traffic volumes by 25% and reducing HGV traffic by approximately 77%, however the proposal increases the total number of HGV traveling to/from the development site on the proposed new haul route along L1157. Based upon the daily average traffic generation of 96 No. HGV trips the forecast increase in total traffic flow over that currently permitted is in the order of 7% incorporating an increasing in HGV traffic of approximately 21% (as before, proposed 96 No. two-way movements replaces 150 No. one-way movements).

3.11.6 Mitigation Measures - Road Improvement

Wicklow County Council has indicated that a two-way haul route along the L1157, directly to and from the R772 is preferred subject not only to appropriate road strengthening, but subject also to road widening works appropriate to accommodating the opposed passage of HGV traffic.

This application identifies a comprehensive site of road improvement works and, if permission for the proposed development is granted, it is expected that it will be conditional on the agreement with the Roads Authority regarding the detailed design and construction of the indicative road works shown on application drawings.

As previously noted, the structure of the carriageway has not significantly degraded since the time of an inspection in 2020. The current road strengthening works are practically identical to the robust strengthening works previously agreed with the Arklow Municipal District Engineer, though some minor modifications have been made to previous areas of strengthening which were identified at the time of the earlier inspection. The principal difference in the overall road improvement scheme is the abandonment of the inter-visible passing areas and instead a widening of the entire road to a consistent 6.0m width over the full length of the L1157 between the quarry entrance and the R772, as favoured by the Roads Authority.

The carriageway of the L1157 will be overlain with a new wearing course giving a consistent pavement surface over the 2 km length of the haul route. The road will be marked with a centreline and yellow road edge markings. Ancillary works will include a crowned road profile to better shed water together with improved roadside drainage swales.

3.11.7 Mitigation Measures – Traffic Management

Local Road L1157 is due to be subject to a revised local road speed limit. It is understood that the speed limit will be lowered to 60km/h. From discussions with the Arklow Municipal District Engineer it was agreed that it would be appropriate, as part of the road improvement scheme, to incorporate electronic driver feedback signing. Potential locations are identified for a total of 4 No. feedback signs, 2 No. facing eastbound traffic and 2 no. facing westbound traffic. The 4 No. signs will be speed feedback signs.

At the outset of the operational phase of the proposed development, drivers travelling to and from the application site will be required to attend an HGV driver induction lecture which the Applicant has initiated at other similar sites and considers a crucial tool for ensuring that all drivers are fully aware of the rules and expectations regarding safety, adherence to the haul route, speed limits, and courteous behaviour towards other road users.

3.12 Interaction of the Foregoing

The interactions of the various potential impacts and mitigation measures have been covered, where applicable, under the relevant sections within the EIAR.

3.13 Mitigation and Monitoring Commitments

Chapter 16 of the EIAR presents a separate compendium of all of the commitments in relation to mitigation measures and monitoring proposals set out within each of the preceding technical chapters of the EIAR.

FIGURES

Figure NTS-1
Site Location Map

Figure NTS-2
Site Location Plan

Figure NTS-3
Existing Site Layout

Figure NTS-4
Surrounding Land Use

Figure NTS-5
Proposed Initial Site Layout during Operational Phase 1A

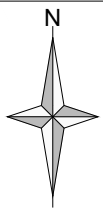
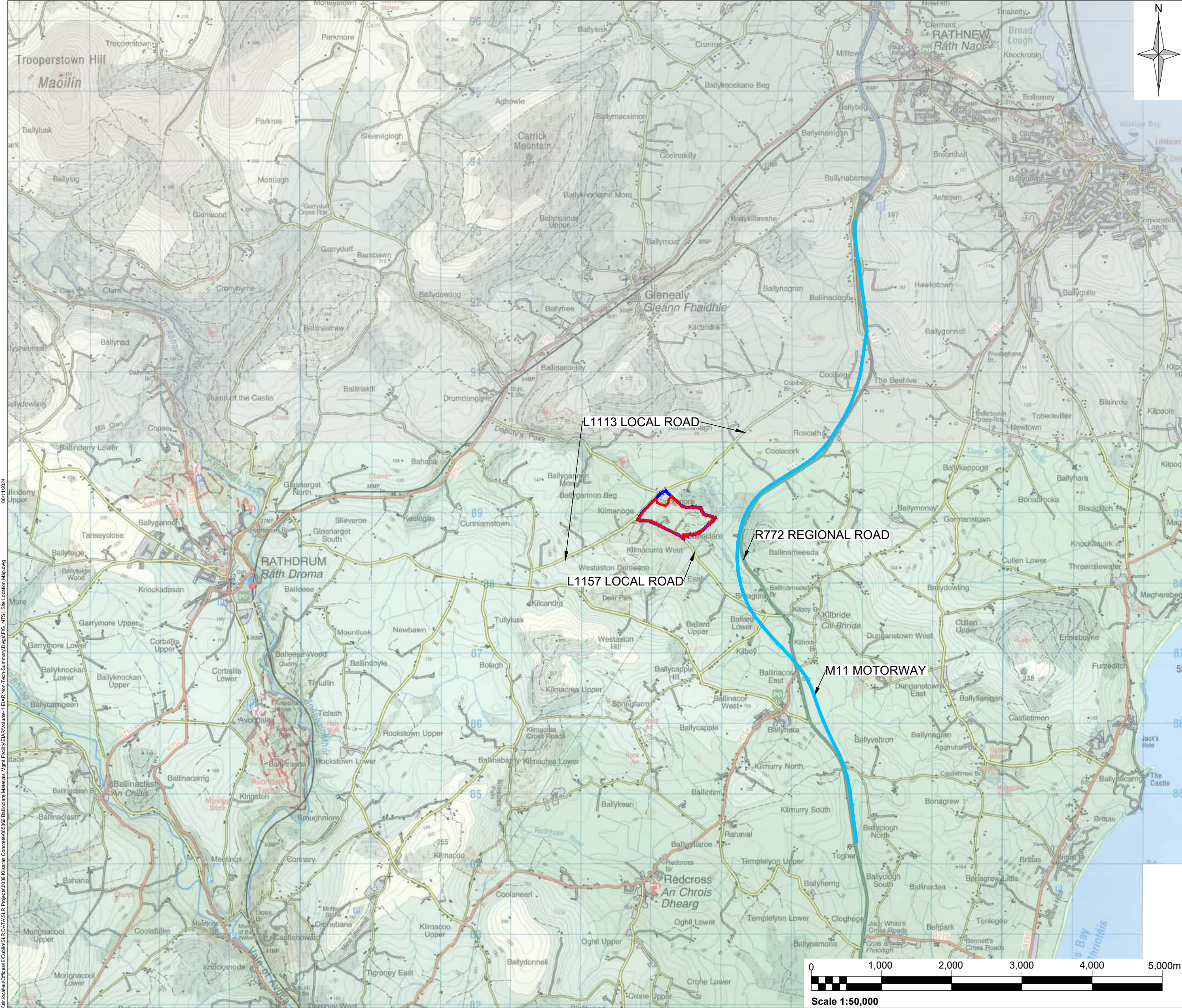
Figure NTS-6
Landfill Cross Sections

Figure NTS-7
Final Restoration and Landscaping Plan

Figure NTS-6
Landfilling Phase 2

Figure NTS-9
Landfilling Phase 3

Figure NTS-10
Environmental Monitoring Locations



Notes:

1. EXTRACT FROM 1:50,000 O.S DISCOVERY SERIES MAP NO. 50.

Legend:

LAND INTEREST BOUNDARY (c. 36.0 HA)

PLANNING APPLICATION AREA (c. 32.6 HA)

| Rev | Amendments | Date | By | Chk | Auth |
|-----|------------|------|----|-----|------|
|-----|------------|------|----|-----|------|



www.slrconsulting.com

Drawing Status & Suitability Code

FINAL

Client

KILSARAN CONCRETE
Ballinclare Quarry, Kilbride, Co. Wicklow

Project

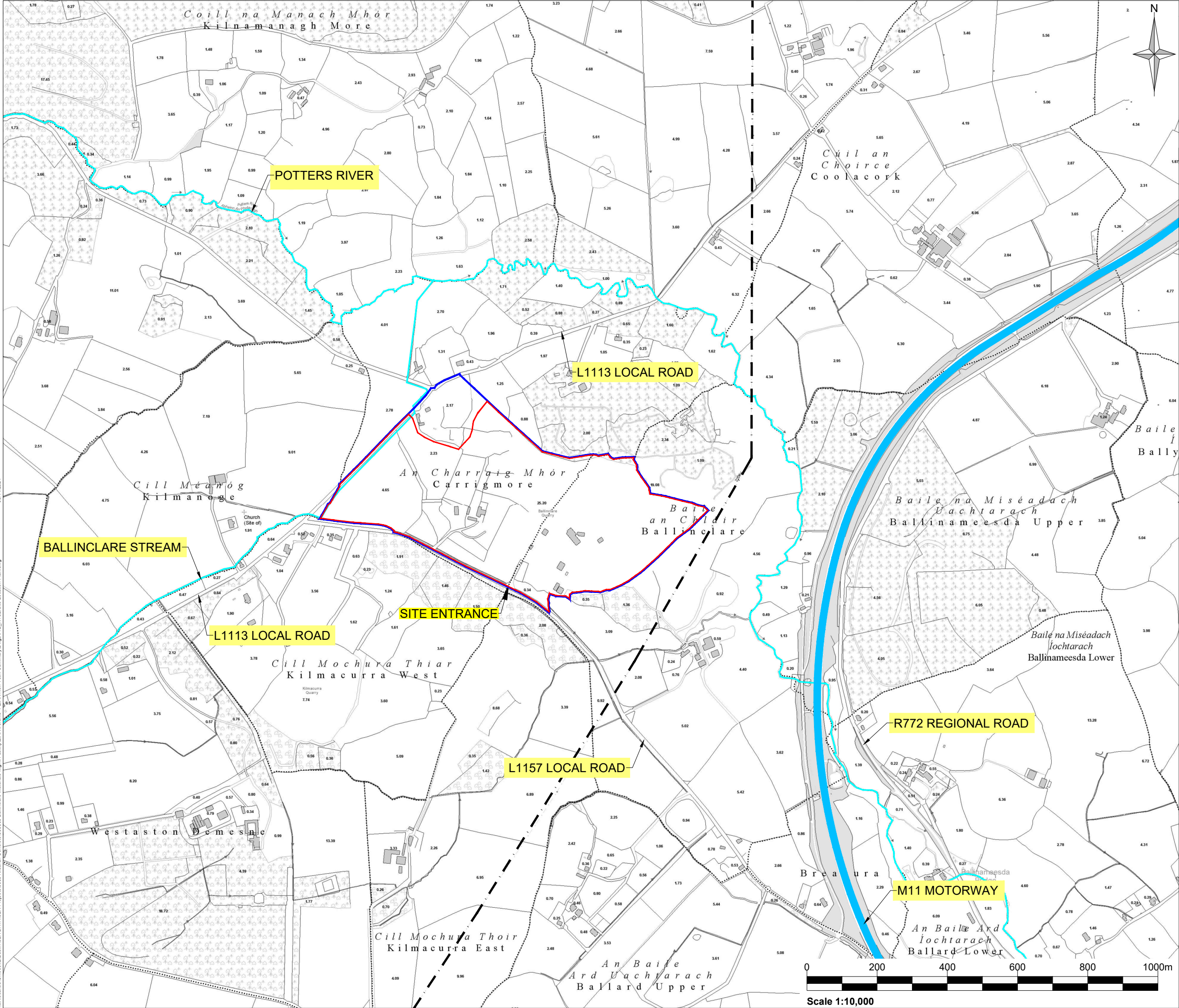
NON TECHNICAL SUMMARY
Materials Recovery / Recycling Facility
and Inert Landfill

Drawing Title

SITE LOCATION MAP

| | | | |
|----------------|---------------|-----------------|--------------|
| Scale | 1:50,000 @ A3 | SLR Project No. | 065366.00001 |
| Designed | EW | Drawn | EW |
| Checked | DL | Authorised | DL |
| Date | 10/24 | Date | 10/24 |
| Drawing Number | FIGURE NTS-1 | | |
| Rev. | 1 | | |

06/11/2024
I:\at_locau\Offices\IEDublin\SLR DATA\SLR Projects\0036 Kilsaran Concrete\065366 Ballinclare Materials Mgmt Facility\ENR\Volume-1 ENR Non-Tech-Summary\Draws\FIG NTS1 Site Location Map.dwg



Notes:

1. EXTRACT FROM ORDNANCE SURVEY 6 INCH MAPPING WW030 & WW0311.

Legend:

LAND INTEREST BOUNDARY (c. 36.0 HA)

PLANNING APPLICATION AREA (c. 32.6 HA)

220kV ELECTRIC OVERHEAD LINE

| | | | | | |
|-----|------------|------|----|-----|------|
| Rev | Amendments | Date | By | Chk | Auth |
| | | | | | |

www.slrconsulting.com

Drawing Status & Suitability Code

FINAL

Client

KILSARAN CONCRETE
Ballinclare Quarry, Kilbride, Co. Wicklow

Project

NON TECHNICAL SUMMARY
Materials Recovery / Recycling Facility
and Inert Landfill

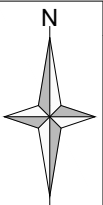
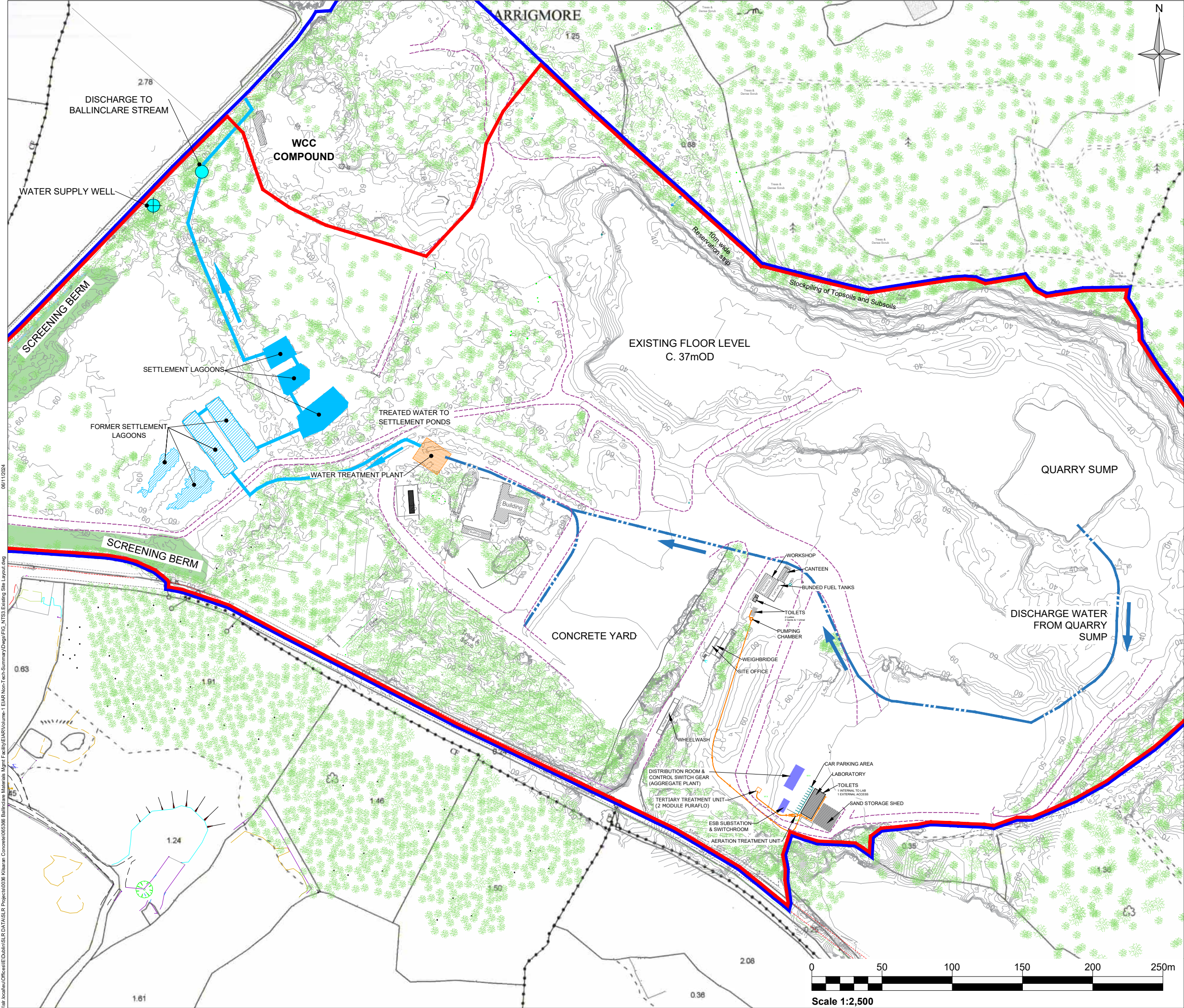
Drawing Title

SITE LOCATION PLAN

| | | | | | | | |
|----------------|----------|-------|-----------------|--------------|-------|------------|-------|
| Scale | 1:10,000 | @ A3 | SLR Project No. | 065366.00001 | | | |
| Designed | EW | Drawn | EW | Checked | DL | Authorised | DL |
| Date | 10/24 | Date | 10/24 | Date | 10/24 | Date | 10/24 |
| Drawing Number | | | | | | | Rev. |
| FIGURE NTS-2 | | | | | | | 1 |

Scale 1:10,000

© This drawing and its content are the copyright of SLR Consulting Ireland and may not be reproduced or amended except by prior written permission. SLR Consulting Ireland accepts no liability for any amendments made by other persons.



Notes:

1. EXTRACT FROM ORDNANCE SURVEY 1:2,500 / 1:5,000 MAP SERIES: 4137-B & 4137-D.

2. EXISTING SITE SURVEY (MAY 2016) PROVIDED BY KILSARAN CONCRETE.

Legend:

- LAND INTEREST BOUNDARY (c. 36.0 HA)
- PLANNING APPLICATION AREA (c. 32.6 HA)
- EXISTING CONTOURS
- INTERNAL ACCESS ROADS
- PUMPED WASTEWATER FROM SURFACE RUNOFF

| | | | | | |
|-----|-------------|-------|----|-----|------|
| 2 | Title block | 06.24 | AB | DL | DL |
| 1 | Title block | 05.24 | AB | DL | DL |
| 0 | | 01.24 | EW | DL | DL |
| Rev | Amendments | Date | By | Chk | Auth |



www.slrconsulting.com

Drawing Status & Suitability Code

FINAL

Client

KILSARAN CONCRETE
Ballinclare Quarry, Kilbride, Co. Wicklow

Project

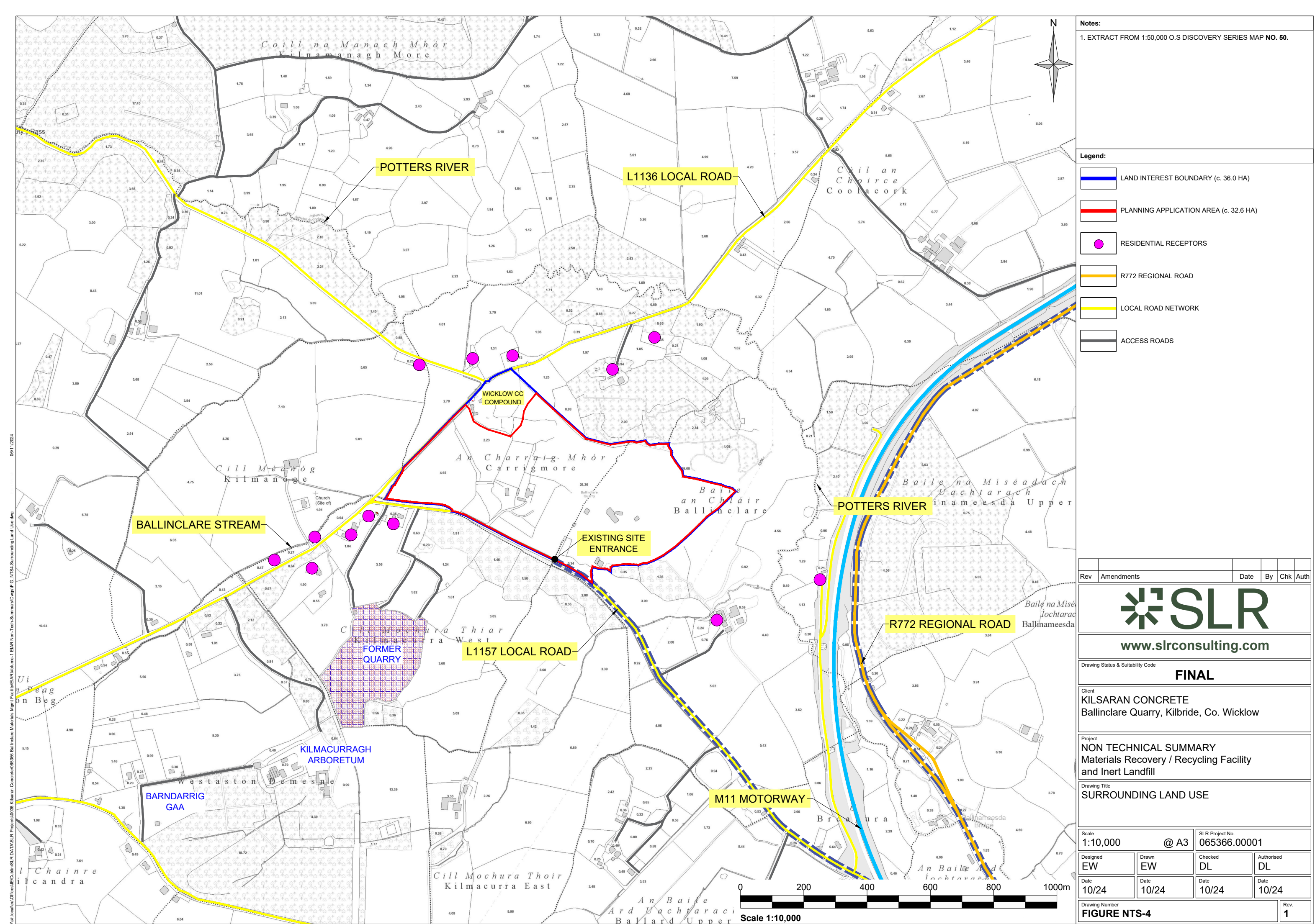
NON TECHNICAL SUMMARY
Materials Recovery / Recycling Facility
and Inert Landfill

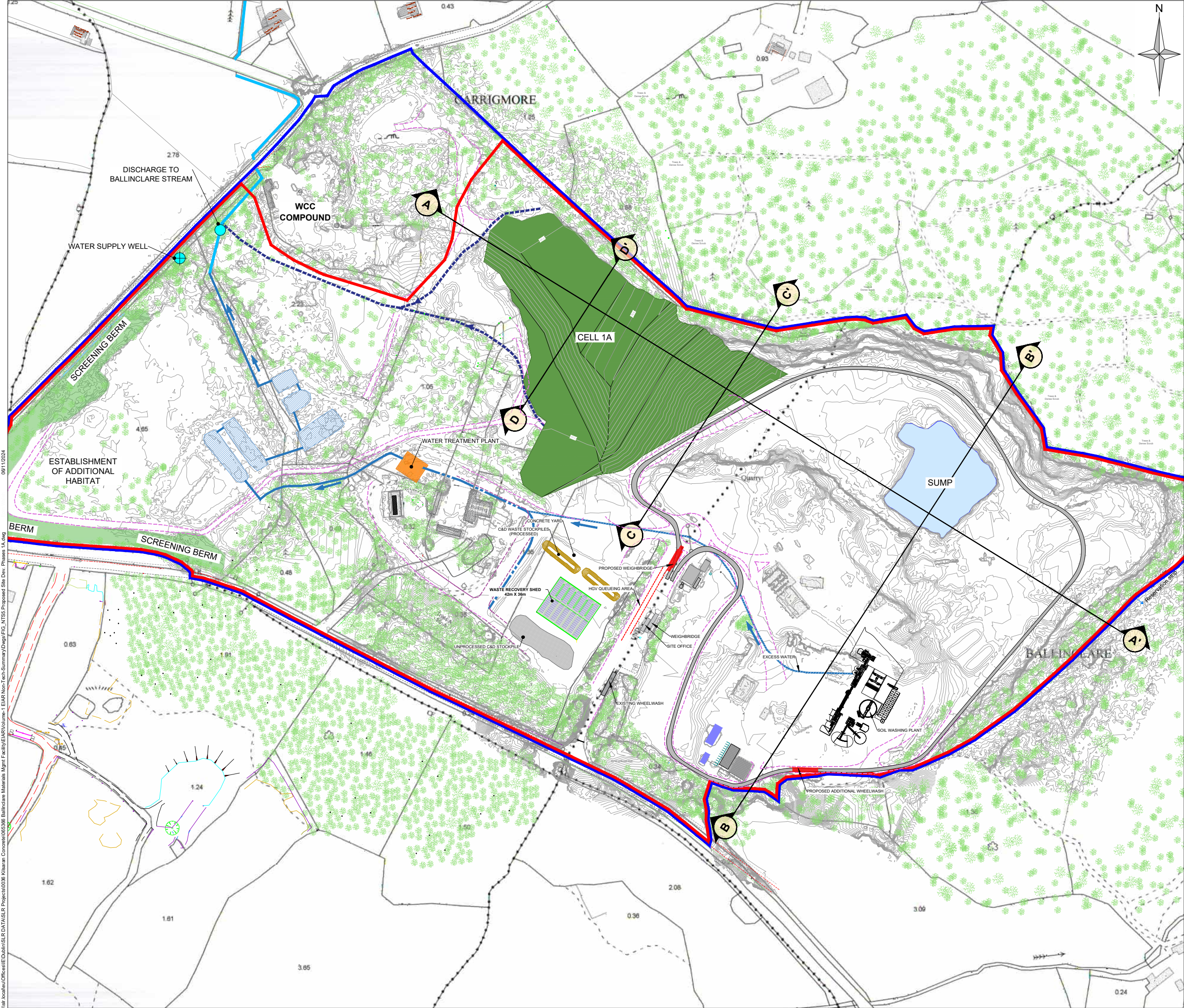
Drawing Title

EXISTING SITE LAYOUT

| | | | | |
|---------------------------------------|---------------|---------------|---------------------------------|--|
| Scale 1:2,500 | | @ A3 | SLR Project No. 065366.00001 | |
| Designed EW | Drawn EW | Checked DL | Authorised DL | |
| Date 10/24 | Date 10/24 | Date 10/24 | Date 10/24 | |
| Drawing Number FIGURE NTS-3 | | | Rev. 2 | |

06/11/2024
\\slr-local\au\Offices\IE\Dublin\SLR DATA\SLR Projects\0036 Kilsaran Concrete\065366 Ballinclare Materials Mgmt Facility\EIA\Volume-1 EIA\Non-Tech-Summary\Drawings\FIG NTS-3 Existing Site Layout.dwg





Notes:

1. EXTRACT FROM ORDNANCE SURVEY 1:2,500 / 1:5,000 MAP SERIES: 4137-B & 4137-D.

2. EXISTING SITE SURVEY (MAY 2016) PROVIDED BY KILSARAN CONCRETE.

Legend:

- LAND INTEREST BOUNDARY (c. 36.0 HA)
- PLANNING APPLICATION AREA (c. 32.6 HA)
- EXISTING CONTOURS
- INTEGRATED CONSTRUCTED WETLAND (ICW)
- PUMPED SURFACE WATER RUN-OFF FROM QUARRY FLOOR / INERT LANDFILL CELLS
- DISCHARGE FLOW DIRECTION

| | | | | | |
|-----|------------------------|-------|----|-----|------|
| 2 | Title block and layout | 06.24 | AB | DL | DL |
| 1 | Layout | 05.24 | AB | DL | DL |
| 0 | | 01.24 | EW | DL | DL |
| Rev | Amendments | Date | By | Chk | Auth |

www.slrconsulting.com

Drawing Status & Suitability Code

FINAL

Client

KILSARAN CONCRETE
Ballinclare Quarry, Kilbride, Co. Wicklow

Project

NON TECHNICAL SUMMARY
Materials Recovery / Recycling Facility
and Inert Landfill

Drawing Title

PROPOSED SITE DEVELOPMENT LAYOUT
PHASE 1A LANDFILLING

| | | | |
|----------------|--------------|-----------------|--------------|
| Scale | 1:3,000 @ A3 | SLR Project No. | 065366.00001 |
| Designed | EW | Checked | DL |
| Date | 10/24 | Date | 10/24 |
| Drawing Number | FIGURE NTS-5 | | |

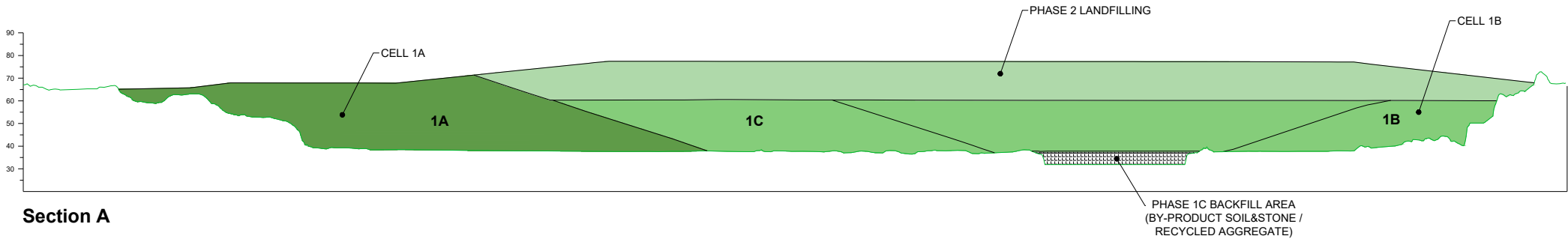
Rev.

2

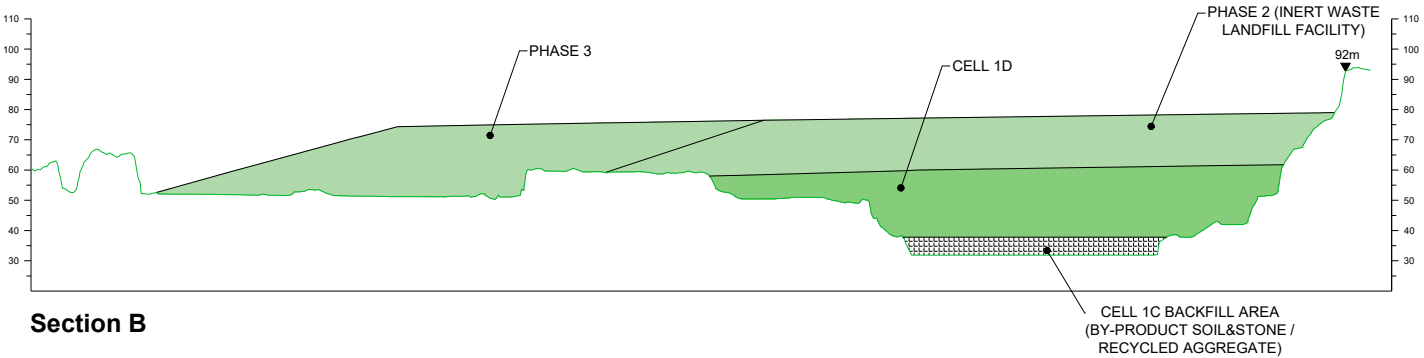
06/11/2024
\\slr-local\au\Offices\IE\Dublin\SLR DATA\SLR Projects\0036 Kilsaran Concrete\065366 Ballinclare Materials Mgmt Facility\NTS-5 Proposed Site Dev. Phases 1A.dwg

09/11/2024

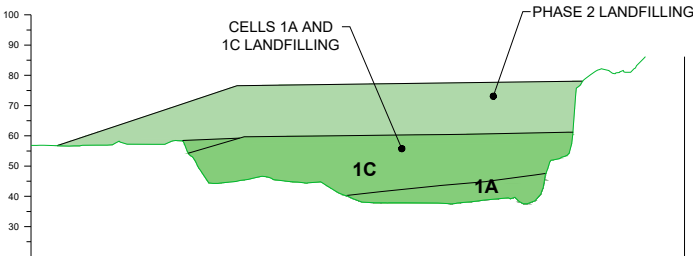
\\slr-local\au\Offices\IE\Dublin\SLR DA\A\SLR Projects\0036 Kilsaran Concrete\065366 Ballinclare Materials Mgmt Facility\EAIR\Volume-1 EAIR Non-Tech-Summary\Drawings\FIG NTS6 Proposed Site Dev Sections.dwg



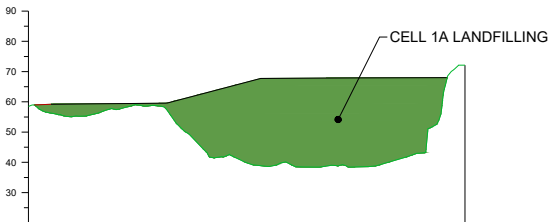
Section A



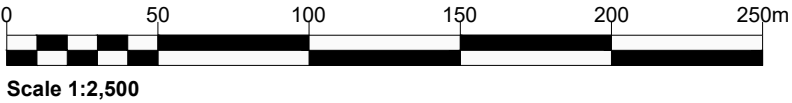
Section B



Section C



Section D



Notes:

1. REFER TO FIGURE NTS3 & FIGURE NTS5 FOR LOCATION OF CROSS SECTIONS.

| Legend: | |
|---------|-------------------------------|
| | EXISTING PROFILE |
| | PHASE 1A LANDFILL |
| | PHASE 1B-1E BACKFILL |
| | PHASE 2-3 BACKFILL OVER 60mOD |

| | | | | | |
|-----|--------------------------|-------|----|-----|------|
| 2 | Title block and Sections | 06.24 | AB | DL | DL |
| 1 | Sections | 05.24 | AB | DL | DL |
| 0 | | 01.24 | EW | DL | DL |
| Rev | Amendments | Date | By | Chk | Auth |



www.slrconsulting.com

Drawing Status & Suitability Code

FINAL

Client

KILSARAN CONCRETE
Ballinclare Quarry, Kilbride, Co. Wicklow

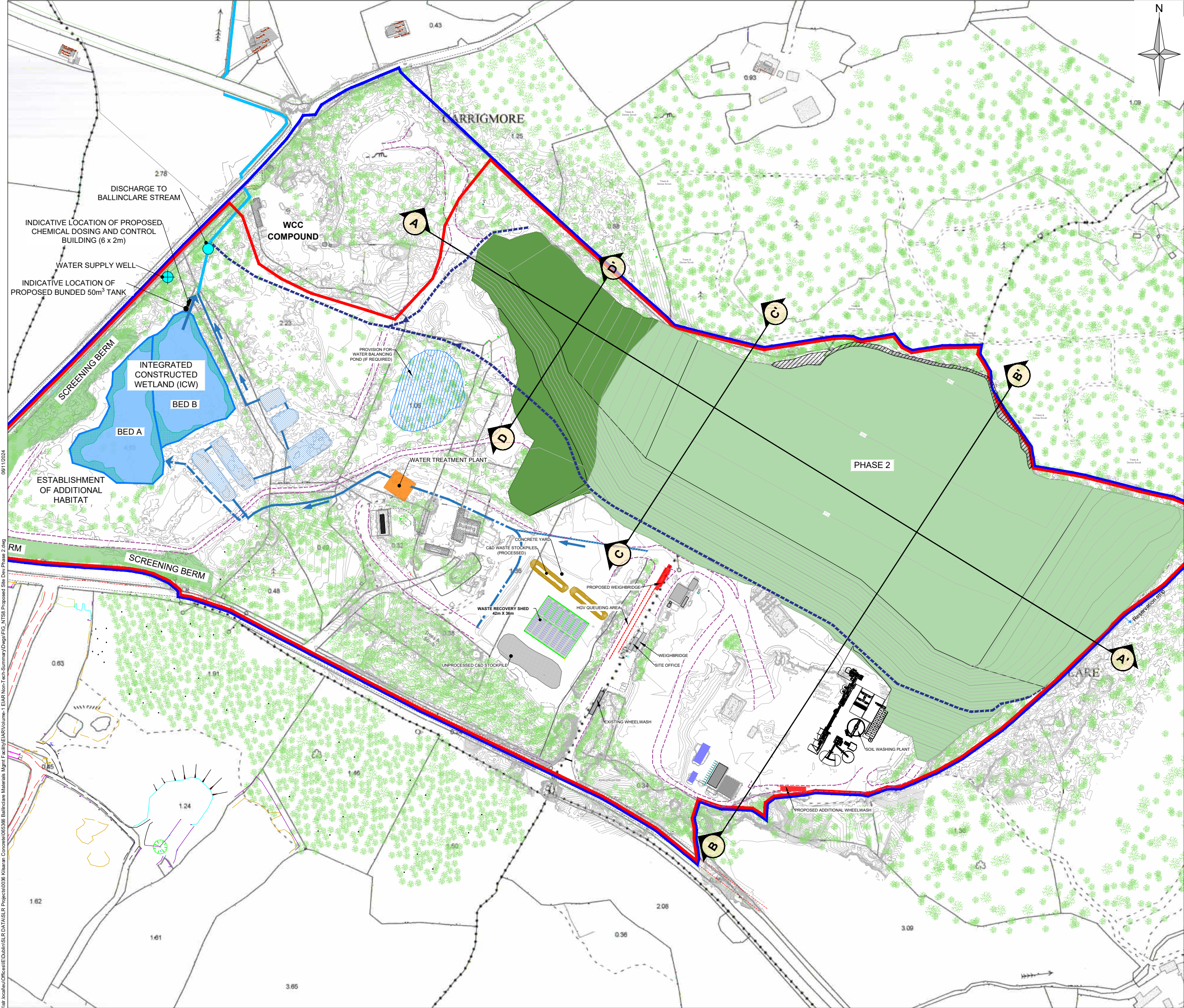
Project

NON TECHNICAL SUMMARY
Materials Recovery / Recycling Facility
and Inert Landfill

Drawing Title

PROPOSED LANDFILL CROSS-SECTIONS

| | | | |
|---------------------------------------|---------------|---------------------------------|------------------|
| Scale 1:2,500 @ A3 | | SLR Project No. 065366.00001 | |
| Designed EW | Drawn EW | Checked DL | Authorised DL |
| Date 10/24 | Date 10/24 | Date 10/24 | Date 10/24 |
| Drawing Number FIGURE NTS-6 | | | Rev. 2 |



Notes:

- EXTRACT FROM ORDNANCE SURVEY 1:2,500 / 1:5,000 MAP SERIES: 4137-B & 4137-D.
- EXISTING SITE SURVEY (MAY 2016) PROVIDED BY KILSARAN CONCRETE.
- CONTOURS SHOWN ARE INDICATIVE ONLY.

Legend:

- LAND INTEREST BOUNDARY (c. 36.0 HA)
- PLANNING APPLICATION AREA (c. 32.6 HA)
- EXISTING CONTOURS
- INTEGRATED CONSTRUCTED WETLAND (ICW)
- PUMPED SURFACE WATER RUN-OFF FROM QUARRY FLOOR / INERT LANDFILL CELLS
- DISCHARGE FLOW DIRECTION
- PROVISION FOR TEMPORARY STORMWATER DRAINAGE CHANNEL (IF REQUIRED)
- AREA OF QUARRY FACE RETAINED FOR PEREGRINE FALCON

| | | | | | |
|-----|------------------------|-------|----|-----|------|
| 2 | Title block and layout | 06.24 | AB | DL | DL |
| 1 | Layout | 05.24 | AB | DL | DL |
| 0 | | 01.24 | EW | DL | DL |
| Rev | Amendments | Date | By | Chk | Auth |

www.slrconsulting.com

Drawing Status & Suitability Code

FINAL

Client

KILSARAN CONCRETE
Ballinclare Quarry, Kilbride, Co. Wicklow

Project

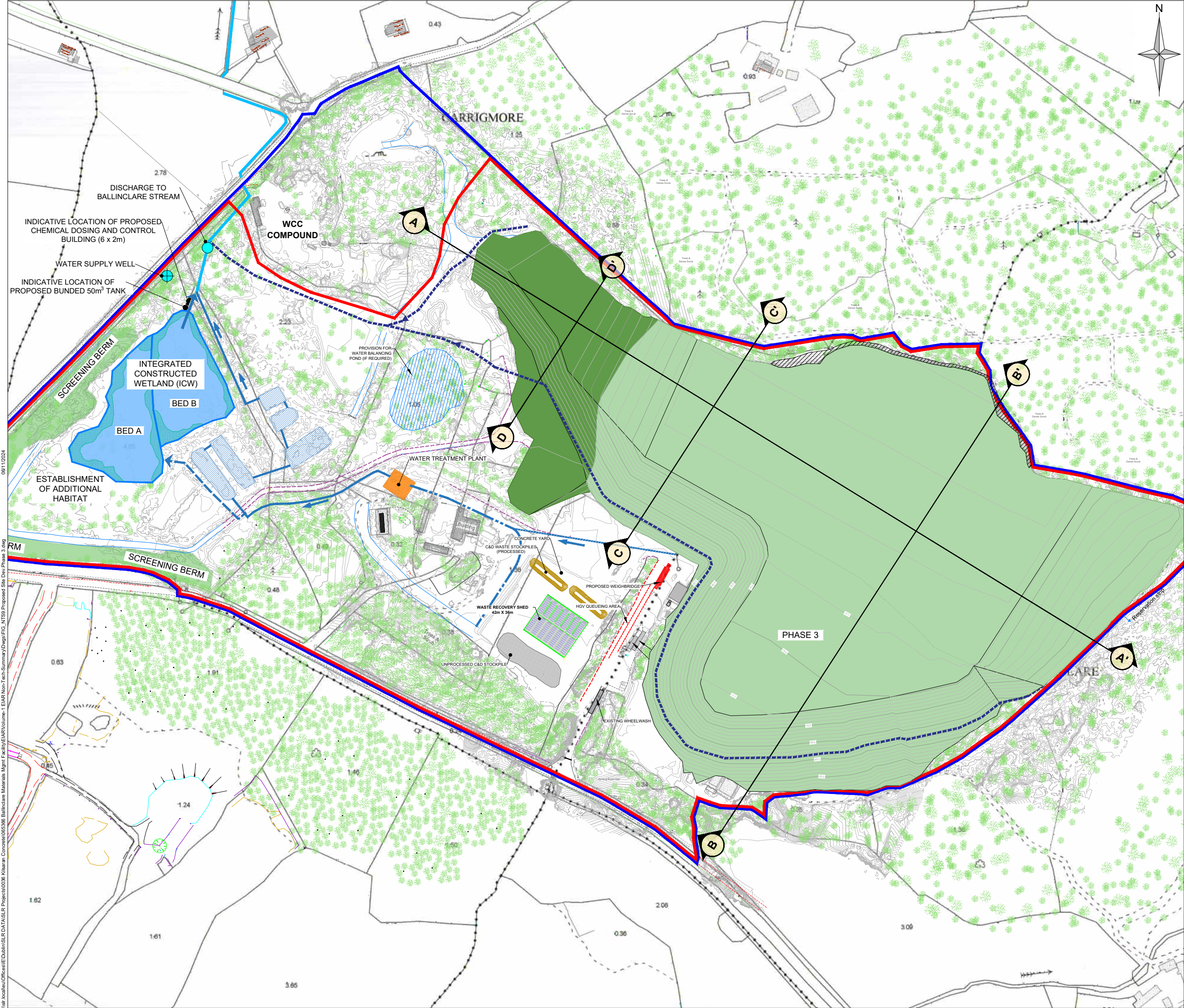
NON TECHNICAL SUMMARY
Materials Recovery / Recycling Facility
and Inert Landfill

Drawing Title

PROPOSED SITE DEVELOPMENT
PHASE 2 - COMPLETED LANDFORM

| | | | | | | | | |
|----------------|--------------|-------|-----------------|--------------|-------|------------|-------|---|
| Scale | 1:3,000 | @ A3 | SLR Project No. | 065366.00001 | | | | |
| Designed | EW | Drawn | EW | Checked | DL | Authorised | DL | |
| Date | 10/24 | Date | 10/24 | Date | 10/24 | Date | 10/24 | |
| Drawing Number | FIGURE NTS-8 | | | | | | Rev. | 2 |

06/11/2024
\\slr-local\au\Offices\IE\Dublin\SLR Data\SLR Projects\0036 Kilsaran Concrete\065366 Ballinclare Materials Mgmt Facility\NTS-8 Proposed Site Dev Phase 2.dwg



Notes:

- EXTRACT FROM ORDNANCE SURVEY 1:2,500 / 1:5,000 MAP SERIES: 4137-B & 4137-D.
- EXISTING SITE SURVEY (MAY 2016) PROVIDED BY KILSARAN CONCRETE.
- CONTOURS SHOWN ARE INDICATIVE ONLY.

Legend:

- LAND INTEREST BOUNDARY (c. 36.0 HA)
- PLANNING APPLICATION AREA (c. 32.6 HA)
- EXISTING CONTOURS
- INTEGRATED CONSTRUCTED WETLAND (ICW)
- PUMPED SURFACE WATER RUN-OFF FROM QUARRY FLOOR / INERT LANDFILL CELLS
- DISCHARGE FLOW DIRECTION
- PROVISION FOR TEMPORARY STORMWATER DRAINAGE CHANNEL (IF REQUIRED)
- AREA OF QUARRY FACE RETAINED FOR PEREGRINE FALCON

| | | | | | |
|-----|------------------------|-------|----|-----|------|
| 2 | Title block and layout | 06.24 | AB | DL | DL |
| 1 | Layout | 05.24 | AB | DL | DL |
| 0 | | 01.24 | EW | DL | DL |
| Rev | Amendments | Date | By | Chk | Auth |

www.slrconsulting.com

Drawing Status & Suitability Code

FINAL

Client

KILSARAN CONCRETE
Ballinclare Quarry, Kilbride, Co. Wicklow

Project

NON TECHNICAL SUMMARY
Materials Recovery / Recycling Facility
and Inert Landfill

Drawing Title

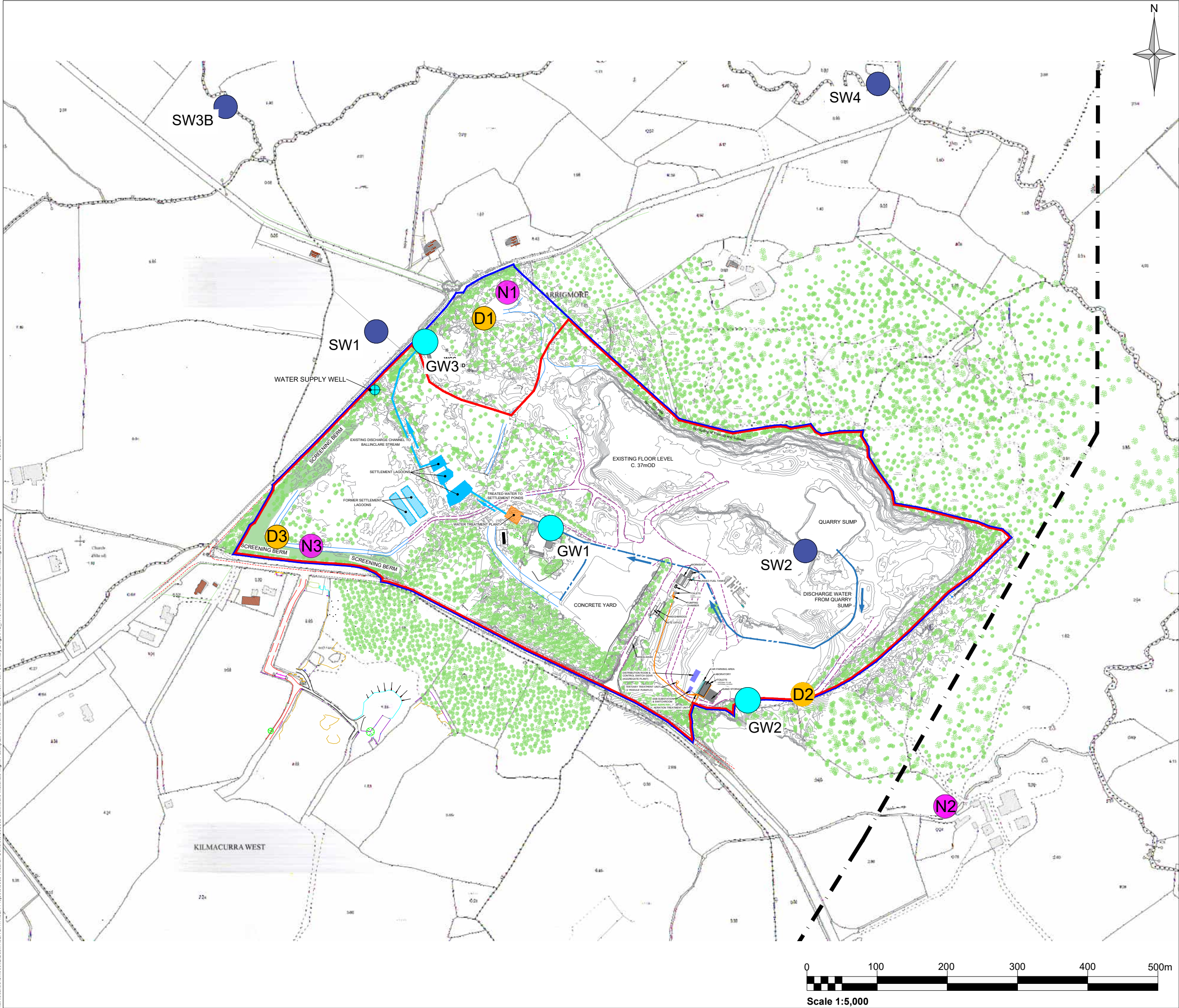
PROPOSED SITE DEVELOPMENT
PHASE 3 - COMPLETED LANDFORM

| | | | | | | | | |
|----------------|--------------|-------|-----------------|--------------|-------|------------|-------|---|
| Scale | 1:3,000 | @ A3 | SLR Project No. | 065366.00001 | | | | |
| Designed | EW | Drawn | EW | Checked | DL | Authorised | DL | |
| Date | 10/24 | Date | 10/24 | Date | 10/24 | Date | 10/24 | |
| Drawing Number | FIGURE NTS-9 | | | | | | Rev. | 2 |

06/11/2024
I:\a\local\au\Offices\IE\Dublin\SLR DATA\SLR Projects\0036 Kilsaran Concrete\065366 Ballinclare Materials Mgmt Facility\NTS-9 Proposed Site Dev Phase 3.dwg

CYAL50316488
© Ordnance Survey Ireland/Government of Ireland.
© This drawing and its content are the copyright of SLR Consulting Ireland and may not be reproduced or amended except by prior written permission. SLR Consulting Ireland accepts no liability for any amendments made by other persons.

06/11/2024
\\slr-local\au\Offices\IE\Dublin\SLR Data\SLR Projects\0036 Kilsaran Concrete\065366 Ballinclare Materials Mgmt Facility\ENR\Volume-1 EIA\Non-Tech-Summary\Drawings\FIG NTS-10 Environmental Monitoring Locations.dwg



Notes:

1. EXTRACT FROM 1:50,000 O.S DISCOVERY SERIES MAP NO. 50.

Legend:

- LAND INTEREST BOUNDARY (c. 36.0 HA)
- PLANNING APPLICATION AREA (c. 32.6 HA)
- DUST MONITORING LOCATIONS
- NOISE MONITORING LOCATIONS
- SURFACE WATER MONITORING LOCATIONS
- GROUNDWATER MONITORING LOCATIONS

| | | | | | |
|-----|------------------------|-------|----|-----|------|
| 2 | Title block and layout | 06.24 | AB | DL | DL |
| 1 | Layout | 05.24 | AB | DL | DL |
| 0 | | 01.24 | EW | DL | DL |
| Rev | Amendments | Date | By | Chk | Auth |

www.slrconsulting.com

Drawing Status & Suitability Code

FINAL

Client

KILSARAN CONCRETE
Ballinclare Quarry, Kilbride, Co. Wicklow

Project

NON TECHNICAL SUMMARY
Materials Recovery / Recycling Facility
and Inert Landfill

Drawing Title

ENVIRONMENTAL MONITORING LOCATIONS

| | | | | | | | | |
|----------------|---------------|-------|-----------------|--------------|-------|------------|-------|---|
| Scale | 1:5,000 | @ A3 | SLR Project No. | 065366.00001 | | | | |
| Designed | EW | Drawn | EW | Checked | DL | Authorised | DL | |
| Date | 10/24 | Date | 10/24 | Date | 10/24 | Date | 10/24 | |
| Drawing Number | FIGURE NTS-10 | | | | | | Rev. | 2 |



Making Sustainability Happen