NON-TECHNICAL SUMMARY

Environmental Impact Assessment Report

Huntstown South Quarry Restoration and Backfill
Waste Licence Review Application

Huntstown Quarry Complex,
North Road, Finglas, Dublin 11

Prepared for : Roadstone Ltd.

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1.0 INTRODUCTION

1.1 Background

This Non-Technical Summary provides supporting information to accompany a Waste Licence Review Application (WLRA), to the Environmental Protection Agency (EPA), by Roadstone Limited, to facilitate the importation and recovery of naturally occurring soil and stone waste at a rate of 750,000 tonnes per annum to restore the South Quarry at the Huntstown Quarry Complex in North Dublin.

The existing parent permission for the Huntstown Quarry Complex (Planning Ref. FW12A/0022 and An Bord Pleanála Ref. No. 06F.241693) was granted in August 2014 and provides for continuation of quarrying activity for 20 years up to 2034. That permission includes provision for the restoration of all quarry voids within the Huntstown Quarry complex, including the South Quarry, by backfilling them to their former (original) ground level through the recovery of naturally occurring soil and stone waste generated by construction and development activity across the Greater Dublin Area.

The restoration works at the West Quarry at Huntstown were substantially completed in September 2020 and at the current time, restoration at the North Quarry is continuing to progress rapidly at an elevated rate of close to 1,500,000 tonnes per annum (as permitted by a separate planning permission, Ref. No. FW16A/0120). It is now expected that the North Quarry will be substantially backfilled by the end of 2022 and that final restoration works (levelling, contouring and seeding) will commence shortly thereafter.

It is currently envisaged that backfilling of the South Quarry will commence in early 2023. In order to facilitate the transfer and re-location of soil waste recovery activities from the North Quarry (where they are currently ongoing) to the South Quarry, a waste licence review application is being submitted to the EPA to provide for the following :

- importation of soil and stone waste to the western side of Huntstown South Quarry at a maximum rate of 750,000 tonnes per annum (as permitted by Planning Ref. FW12A/0012);
- extension of the licensed site boundary to incorporate the proposed waste recovery area on the western side of the South Quarry and the haul roads leading to / from it;
- an increase in the total permitted (lifetime) soil and stone waste intake to the (extended) waste facility to 18.76 million tonnes;
- continued use of pre-existing site infrastructure to support recovery activities; and
- re-routing of traffic flows via existing internal haul roads (i.e. within the quarry complex) to access the backfilling / recovery area at the South Quarry.

The proposed development already has the benefit of planning permission and no new infrastructure is required to facilitate transfer and re-location of established soil waste recovery operations from Huntstown North Quarry across to the western side of the South Quarry or the extension of the waste licence boundary to include this area. It is expected that all pre-existing site infrastructure (including weighbridges, wheelwash facility, site offices, welfare facilities, quarantine shed and workshop / maintenance shed) will continue in service for the duration of the restoration / backfilling and soil recovery activities operations at the South Quarry.

1.2 The Applicant

The Applicant, Roadstone Limited (hereinafter 'Roadstone'), is an operating company within CRH plc and is Ireland's leading supplier of aggregates, construction and road building materials. The company currently employs several hundred people at 47 operating locations throughout the country.

Roadstone originally developed from aggregate supply companies founded by the Roche Brothers in the 1930s. After steady growth through the 1930s and 1940s, it was floated on the Irish Stock Exchange in 1949. After further significant growth through the 1960s, Roadstone merged with Cement Ltd in 1970 to become Cement Roadstone Holdings (CRH) plc. Today, CRH plc is one of the world's leading suppliers of construction materials, operating in 29 countries and employing over 76,600 people worldwide.

The excavation and blasting of limestone has been undertaken at the Huntstown Quarry Complex for the past four decades, following grant of an outline permission in or around 1969. It is understood that quarrying at the North Quarry was commenced on foot of a planning permission granted in 1973. Planning permission for the South Quarry was subsequently awarded in 1994.

Although Roadstone's principal business interest in Ireland is aggregate extraction and manufacture of building materials and products, it is also currently restoring a number of its former pits and quarries under EPA waste licence by backfilling using imported soil and stone waste. At the present time, apart from Huntstown, the company also operates licensed soil recovery facilities at 4 other locations across Ireland, in Counties Dublin, Cork, Wicklow and Wexford.

In addition to these facilities, Roadstone also operates construction and demolition (C&D) waste recycling facilities at several other pit / quarry locations. These recovery facilities are principally engaged in the recycling / re-use of concrete and bituminous wastes and are regulated by way of Local Authority waste facility permits.

1.3 Site Location

The site to which the waste licence review application relates straddles the townlands of Kilshane, Huntstown, Johnstown, Cappoge and Grange, Co. Dublin. It is located approximately 2.5km north-west of the Dublin suburb of Finglas and 1km west of the interchange between the N2 Dual Carriageway and the M50 Motorway. The site location, the extent of the existing licenced facility and the proposed extension thereto are shown on an extract from the 1:50,000 scale Ordnance Survey Discovery Series map of the area in Figure NTS-1.

1.4 Land Ownership

Roadstone Ltd is the holder of the freehold title to all lands within the Huntstown Quarry Complex, excluding the sites of the existing electrical power generation plant and anaerobic digestion plant, both of which are operated by Energia. The company's total landholding extends to approximately 171.8 hectares (424.5 acres). The plan extent of the lands owned by Roadstone are outlined in blue on a 1:10,000 scale Ordnance Survey map in Figure NTS-2. The plan extent of the existing waste licence area and the proposed extension thereto are also indicated on the same figure.

1.5 Site Description

Extending the waste licence area to incorporate permitted backfilling activities at the South Quarry using imported soil and stone waste will increase the licenced area from 55 hectares (135.9 acres) at present to 77.5 hectares (191.5 acres). The extension to the existing licenced site area comprises:

- The western side of the existing deep limestone quarry identified as Huntstown South Quarry, together with perimeter screening and overburden mounds;
- The existing network of surface water settlement lagoons at the north-western corner of the quarry; and
- the existing network of access roads leading from the existing recovery site infrastructure area to the South Quarry.

The existing EPA waste licence area at Huntstown comprises the North Quarry, West Quarry, the original C&D recovery area at the Central Quarry and the proposed future C&D recovery area at the north-eastern corner of the landholding as well as some shared site infrastructure in the centre of the quarry complex. Backfilling at the North Quarry is ongoing and extends across an area of approximately 11.2 hectares (27.0 acres). Backfilling of the West Quarry, across an area of 12.2 hectares (30.1 acres), was completed in September 2020.

Ground levels in and around the South Quarry have been significantly disturbed by historic quarrying activity which although still ongoing, is expected to be largely complete by 2024. Original ground levels around the South Quarry vary between approximately 80mOD and 85mOD (Malin) along the western face and between 75mOD and 80mOD along the eastern face. Existing ground levels immediately behind the quarry faces are locally 5m to 10m higher than surrounding ground due to the presence of perimeter screening mounds.

At the present time, the existing floor level in the South Quarry varies across a number of benches which are currently being worked, from approximately 5mOD on the western side to -10mOD on the eastern side. The corresponding depth of the quarry from the original (surrounding) ground level varies from 75m to 80m around the western side and from 85m to 90m around the eastern side.

Rock extraction on the eastern side of the South Quarry is almost complete and close to the final excavation level which extends only very locally down to -17mOD in this area of the quarry, in line with the 2014 grant of planning permission.

The bulk of the remaining extractable rock reserves at the quarry are located on the western side of the quarry and in this area too, the final floor level is -17mOD. It is envisaged that remaining limestone reserves in this area will be excavated over the next 2 years.

1.6 Site Access

Traffic access to the Huntstown Quarry Complex is primarily obtained via the R135 Regional Road (also known as the 'North Road' and the former N2 National Primary Road). Traffic coming from Dublin City Centre or the M50 Motorway turns onto the N2 Dual Carriageway at Junction 5 of the M50 and travels a short distance north, before turning (west) off a dedicated slip road onto the R135 at Coldwinters. Thereafter traffic continues south for a short distance along the R135 before turning right (west) via a dedicated right–turn junction onto the access road leading into the Huntstown Quarry Complex.

Traffic travelling south from Ashbourne exits the N2 Dual Carriageway at Junction 2 (the Cherryhound Interchange near The Ward) and continues south along the R135 Regional Road, through Kilshane Cross, to the right-turn junction with the access road leading into the Huntstown Quarry Complex.

There is no road access to the Huntstown Quarry complex or to the application site from Kilshane Road (also known as Cappagh Road) to the west of Roadstone's landholding. Traffic from Ballycoolin, Blanchardstown and the N3 to the west travels along the N2 / N3 Link Road to the Cherryhound Interchange and then continues south along the R135 Regional Road.

1.7 Surrounding Land-Use

The South Quarry is located entirely within the existing quarry complex at Huntstown. The lands immediately to the north of the quarry comprise a wide corridor which is traversed by several overhead electricity transmission lines running to / from the Huntstown sub-station at the M50 / N2 interchange. The lands beneath them are set as grassland and also hold the settlement ponds for surface water and groundwater water discharged from the quarry. These lands are also traversed by a drainage channel which flows east off-site to the Finglas Stream.

The undeveloped lands which occur immediately south and east of the quarry are currently in use as agricultural grassland, while those to the west and north-west of it comprise neighbouring light industry and science and technology parks along the Cappagh Road (including Stadium Business Park, Huntstown Business Park and Millennium Business Park).

At a greater distance, the electrical power generation plant and anaerobic digestion plant (both operated by Energia), R135 Regional Road and N2 Dual Carriageway are all located to the north-east. The lands north of, and beyond, the transmission lines comprise the remainder of the Huntstown Quarry complex, including the Central Quarry and central processing and concrete / asphalt production areas, as well as the recently restored West Quarry and the existing soil backfill and recovery operation at the North Quarry.

The M50 motorway and the proposed alignment for the Metro West light rail line both lie to the south of the quarry. Existing land-use in the vicinity of the application site, including residential and industrial development, is shown on a land-use map in Figure NTS-3.

1.8 Need for the Development

The South Quarry at Huntstown has previously been identified as a suitable receptor site for excess soil and stone generated by construction activity across the Greater Dublin Area, and planning permission has been in place in for the backfilling of this quarry to former ground level since 2004.

The most recent planning permission in respect of extraction activity at the Huntstown Quarry Complex (Fingal Planning Ref. No FW12A/0022 and An Bord Pleanála Ref. No. 06F.241693) included provision for all quarries within the complex to be backfilled to surrounding ground level using imported soil and stone and restored to grassland and possible agricultural / grazing use. The permitted soil intake rate to all these quarries under that particular planning permission was limited to 750,000 tonnes per annum.

Given its proximity to, and ease of access from, the M50 Motorway and the N2 Dual Carriageway and the wider national road network, Huntstown South Quarry is particularly well located to provide additional / future soil waste recovery capacity across the Greater Dublin Area and the wider Eastern Midlands Waste Management Region. The need for such capacity is evidenced by the continued, sustained high level of demand for soil intake capacity at Huntstown North Quarry from hauliers, contractors and developers (and at an elevated level of 1,500,00 tonnes per annum) since backfilling and recovery activities commenced there under licence back in October 2015.

In each year since 2016, Roadstone has had to restrict / allocate available soil waste intake capacity at its existing facility at Huntstown North Quarry among its customer base. The level of demand has also been such that the facility was unable to operate on a 12-month year-round basis as the permitted annual intake capacity has been reached weeks, and in some cases months, before the end of the calendar year, even in 2020, when there was a reduced level of construction activity as a result of the Covid-19 pandemic.

In light of the existing high level of demand for soil waste recovery capacity at Huntstown, and in order to provide some continuity and market certainty in future years, it is considered that the restoration of the South Quarry using imported soil and stone waste should (subject to approval of the waste licence review application) commence early in 2023, on cessation of the backfilling and recovery activities at Huntstown North Quarry.

The annual soil waste intake to Huntstown South Quarry, at a maximum permitted rate of 750,000 tonnes per annum, will be markedly lower than that which is currently permitted at Huntstown North Quarry (1,500,000 tonnes / annum). Notwithstanding this fact, the proposed backfilling activities at the South Quarry will continue to provide critical waste recovery capacity for the wider region for the period of its future operation.

1.9 Alternatives

When considering possible alternative to the proposed recovery activities at Huntstown South Quarry, due regard should be had to the fact that soil and stone waste recovery facilities typically accept and handle large volumes of relatively low value wastes and that transportation and haulage costs account for a significant proportion of overall costs to waste producers, in this instance construction contractors and/or site developers.

There is therefore a strategic and commercial value and benefit to locating inert waste management facilities in close proximity both to the markets they serve and to high quality road networks. From an environmental perspective, proximity to markets also means that there are reduced carbon emissions associated with road haulage of soil and stone waste to recovery facilities. This accords with the general principles of sustainable development.

1.9.1 Development at Greenfield Site

The provision of 750,000 tonnes of soil waste intake capacity per annum at Huntstown South Quarry offers clear environmental and economic advantages in the years ahead relative to any alternative which would provide a comparable level of intake capacity at a greenfield site location elsewhere across the region (e.g., within an existing natural depression, or benched into an existing natural slope).

The restoration of the former quarry void is already permitted under a pre-existing planning permission and is a logical, progressive evolution from past extractive activities. It is also compatible with previously permitted quarry development.

As for quarry development, the backfilling and recovery activities at the quarry will essentially comprise handling, placement and transport of naturally occurring geological materials. Although they may differ slightly, the potential environmental impacts associated with backfilling and waste recovery activities will essentially be similar in nature to those associated with prior extraction of rock (specifically in respect of potential dust and noise emissions, potential impacts on surface water and groundwater, and traffic related impacts). Likewise, the mitigation measures and environmental controls which will be used to reduce and eliminate these impacts are broadly similar to the best practice measures used in the extractive sector.

Development of a new facility at a greenfield site with an annual soil intake capacity of up to 750,000 tonnes per annum would necessitate significant site development works and associated cost. Given the compatibility with past extractive activities and the fact that the necessary site infrastructure is already in place at Huntstown, this means that the continuation of soil recovery activities there will extend the life of pre-existing development / infrastructure, minimise waste, conserve resources and reduce establishment costs.

As such the establishment and operation of a soil waste recovery facility at Huntstown South Quarry is much more aligned with the principles of sustainable development and public policy objectives in respect of the circular economy than any potential alternative development at a greenfield site.

1.9.2 Development at Alternative Quarry Location

In an overall planning context, given the obvious long-term beneficial impact in restoring a previously disturbed landform to its original ground profile and the reduced short-to-medium term impacts over its operational life, it is considered that the establishment and operation of an inert waste recovery facility at a former quarry site is preferable to a 'greenfield' site alternative.

As previously noted, the Huntstown South Quarry is strategically located close to Dublin City and is well served by the existing national road network, principally the M50 Motorway and N2 Dual Carriageway and is located within a quarry complex which has a history of significant traffic generation

/ local road use associated with previous extractive activities and more recent soil waste recovery activity (specifically at the nearby North and West Quarries).

At the present time, having regard to the criteria and policy objectives set out in regional waste management plan, which specifically reference the suitability of former quarry sites for development of soil and stone recovery facilities, it is considered that there are unlikely to be many other strategically located quarry sites within the wider waste region which offer the potential to develop a recovery facility of similar size and capacity as that at Huntstown South Quarry.

1.9.3 Do-Nothing Scenario

In the absence of any soil waste intake / recovery capacity being provided at Huntstown South Quarry, the replacement soil waste intake and recovery capacity (of 750,000 tonnes per annum) would need to be identified and made available within a relatively short time period (by early 2023) across a range of other waste facilities within the Greater Dublin Region. Such facilities would likely be more distant from the core Dublin market where much of the soil waste is likely to be generated and would result in an increased number of longer HGV trips on the road network, increased emissions, reduced efficiency and increased cost.

2.0 PROPOSED DEVELOPMENT

2.1 Existing Licensed Waste Activities

Planning permission for the restoration all existing and planned future quarries at the Huntstown quarry complex was obtained in August 2014 (Fingal County Council Ref. No FW12A-0022, An Bord Pleanála Ref. No. 06F.241693). The permission provides for the importation and recovery of naturally occurring waste, principally excess soil, stones and/or broken rock from construction and development sites, to completely backfill and restore the voids created by the previous extraction of overburden soils and limestone bedrock.

Restoration of quarry voids by backfilling with imported soil and stone waste is a designated waste recovery activity under national and European waste management legislation. The activity is technically classed as '*recovery through deposition on land*' and in a waste management context, quarry backfill locations are typically identified as '*soil recovery facilities*'.

At Huntstown, the scale of the quarry backfilling activities is such that it also requires a waste licence from the Environmental Protection Agency (EPA). The original waste licence (Ref. W0277-01) issued by the EPA in February 2015 provided solely for soil waste recovery at the North Quarry. It also applied a restriction on the rate of soil and stone waste intake, limiting it to a maximum of 750,000 tonnes per (calendar) year, in line with the 2014 planning permission.

A revised waste licence (Ref. W0277-02) which provided for an increase in the waste intake limit to 1,500,000 tonnes per annum at the North Quarry and an extension of the licensed waste facility to also include the West Quarry was issued by the EPA in September 2017, following granting of planning permission for an increased rate of soil importation and recovery by Fingal County Council.

The existing waste licence at Huntstown (Ref. No. W0277-03) was issued in October 2018 and, in addition to providing for the recovery of soil and stone through backfilling on land at the North Quarry and West Quarry, also provides for establishment of a construction and demolition (C&D) waste recovery facility in the north-eastern corner of the Roadstone landholding.

The existing waste licence includes the following provisions in respect of the importation and recovery of soil and stone at the North Quarry and West Quarry:

- use of dedicated waste infrastructure and/or shared use of existing infrastructure with the established aggregate, concrete and asphalt production businesses which are co-located at the Huntstown quarry complex;
- separation of non-inert C&D waste (principally metal, timber, PVC pipes and plastic) unintentionally imported within consignments of soil and stone and its transfer to off-site waste disposal or recovery facilities;
- final restoration of the backfilled quarry voids (including placement of cover soils and seeding) and its return to agricultural grassland; and
- ongoing environmental monitoring of noise, dust, surface water and groundwater for the duration of the soil recovery / quarry backfilling works and for a short period thereafter.

Any overburden soils stripped in advance of rock extraction is currently stockpiled in overburden screening mounds around the perimeter of the Huntstown quarries. These soils will be placed over the imported / recovered materials and used to complete the backfill and restoration of quarry lands to agricultural grassland over time.

At the present time, the backfilling of the West Quarry is complete and grass cover has been established across the former quarry footprint. Backfilling of the North Quarry is continuing to progress rapidly. The current rate of soil and stone intake at the North Quarry is at, or close to, the

current maximum permitted rate of 1,500,000 tonnes per annum. It is now expected that the North Quarry will be substantially backfilled by the end of 2022 and that final restoration works (levelling, contouring and seeding) will progress shortly thereafter.

2.2 Proposed Waste Activities / Waste Licence Amendments

As previously noted, restoration of the South Quarry at Huntstown by backfilling to former ground level using imported soil and stone already has the benefit of planning permission. At the present time, it is intended that the quarry will be restored by backfilling with waste soils on its western side and with non-waste ('by-product') soils on its eastern side. The two areas will be separated by a berm constructed of natural soils and/or crushed rock which will be raised (in stages) as the levels of imported soil and stone placed in the quarry rise over time.

At the present time, it is expected that all soil and stone waste will be routinely directed to the western side of the South Quarry on a continual, ongoing basis and that (non-waste) soil and stone by-product will only be directed on a campaign basis and as demand requires, to the eastern side.

In light of the current, consistent and sustained high level of demand for soil waste recovery capacity at Huntstown and the imminent cessation of rock extraction activity at the South Quarry, Roadstone is currently planning to commence restoration, backfilling and soil waste recovery activities on the western side of the South Quarry at the approved intake rate of 750,000 tonnes per annum early in 2023, following cessation of waste recovery activities at the North Quarry.

In order to facilitate the transfer and re-location of soil waste recovery activities to the South Quarry, a waste licence review application is submitted to the EPA to provide for the following:

- importation of soil and stone waste to the western side of Huntstown South Quarry at a maximum rate of 750,000 tonnes per annum (as currently permitted by Planning Ref. FW12A/0012);
- extension of the licensed site boundary to incorporate the proposed waste recovery area on the western side of the South Quarry and the haul roads leading to / from it;
- an increase in the total permitted (lifetime) soil and stone waste intake to the (extended) waste facility to 18.76 million tonnes;
- continued use of pre-existing site infrastructure to support these activities; and
- re-routing of internal traffic flows to and from the backfilling / recovery area at the South Quarry across pre-existing haul roads within the quarry complex.

The extent of the existing licensed waste facility and the proposed extension thereto are indicated on the layout plan in Figure NTS-4. Details of the overall restoration scheme for Huntstown, previously approved under the 2014 quarry permission, are provided in Figure NTS-5. Proposed final restoration contours at the South Quarry are shown separately in Figure NTS-6 and cross-sections through the backfilled quarry are provided in Figure NTS-7. Existing environmental locations around the quarry complex are shown in Figure NTS-8.

The importation and recovery of soil and stone waste at the South Quarry will only commence after:

(i) the determination of the waste licence review application by the EPA, the issuing of an amended waste licence (with an increase intake limit and extended waste licence area); and

(ii) cessation of soil and stone waste importation for backfilling and recovery at the North Quarry.

2.3 Site Infrastructure

No new infrastructure is required to facilitate transfer and re-location of established soil waste recovery operations to the western side of the South Quarry or the extension of the licensed site area to include this area.

All pre-existing site infrastructure including weighbridges, wheelwash, site offices, welfare facilities, quarantine shed, and workshop / maintenance shed will remain in service as quarry backfilling and soil recovery activities at Huntstown are transferred / re-located to the South Quarry.

The only notable change arising as a result will be the re-routing of HGV lorries and articulated trucks across the quarry complex to the new recovery area at the South Quarry, as described below. Details of the layout and configuration of site infrastructure for the duration of the backfilling and soil recovery activities at the South Quarry are shown on the site layout plan in Figure NTS-4.

2.4 Internal Traffic Routing

Within Roadstone's landholding, HGV traffic to and from the South Quarry runs across a network of internal roads which lead either to the main quarry descent at its northern face or around to its eastern side. In the short-to-medium term, the existing access road to the northern face of the quarry will be severed and closed as the Central Quarry is developed further (in line with planning permission) and the quarry workings on either side of the road are merged to form a single quarry. After that time, traffic to and from the South Quarry will be diverted onto an alternative (pre-existing) access route which runs immediately beyond the eastern limit of the permitted Central Quarry excavation.

As previously noted, the South Quarry will be restored by backfilling with waste soils on its western side and non-waste ('by-product') soils on its eastern side. The proposed routing of HGVs and articulated trucks carrying imported soil waste to and from the South Quarry is described below and is also indicated on Figure NTS-4. The proposed routing takes account of the planned changes to the internal road network within the Huntstown Quarry Complex which are necessitated by the future development of the Central Quarry.

After travelling past the security hut along the main access road into the Huntstown complex, any HGV traffic heading for the backfill / waste recovery area on the western side of the South Quarry will turn right and travel 200m north to be weighed in at the existing weighbridges before then proceeding a short distance northwards to turn back south at a (painted) mini-roundabout.

Thereafter, at the junction with the central spine road through the quarry complex, HGV traffic will turn left and travel a short distance east before then turning right, on to the existing road along the eastern side of the Central Quarry. HGVs will travel along this road for approximately 600m to a T-junction and turn left (and south) to re-join the main access road leading to the northern side of the South Quarry.

Approximately mid-way along the access road on the eastern side of the Central Quarry, there is a T-junction at which HGVs importing soil and stone classified as by-product turn left (and continue south-eastwards) to the eastern side of the quarry where it will be unloaded, placed and used for quarry backfilling purposes. It is envisaged that activities on the eastern side of the South Quarry will only proceed on an intermittent / campaign basis using soils which have been excavated from a small number of relatively large developments and confirmed as a by-product by the EPA.

2.5 Surface Water Management

Rain falling across the much of the existing licensed waste facility and the proposed South Quarry extension area either:

- runs over unsealed ground into existing quarry voids and collects at sumps at low points on quarry floors / backfill areas; or
- percolates down through existing soil / rock at the ground surface as recharge to groundwater, at which point it joins groundwater flow toward quarry faces / floors.

At the present time, groundwater levels at the North Quarry and South Quarry are managed by means of sumps in the quarry floor. Surface water run-off and dewatered groundwater are collected in sumps at low points on the quarry floor and pumped via existing flexible pipe networks to surface water drainage channels and settlement ponds at the ground surface.

In the course of future backfilling and recovery operations at the South Quarry, the upper surface of the backfilled soil will be graded so as to ensure that surface water run-off falling over the quarry footprint falls to sumps at temporary low points within the quarry floor or backfilled material. These temporary sumps will effectively function as primary settlement ponds. Water which collects at sumps or at low points will be pumped directly to existing permanent settlement ponds, located beyond the north-western corner of the South Quarry, as shown on the site layout plan in Figure NTS-4.

With the elapse of the required retention time in settlement ponds, the treated surface water run-off then flows north-east along a pipe and is discharged to a drainage channel which runs eastwards through the Roadstone landholding for approximately 500m. Thereafter it passes through additional treatment infrastructure (a hydrocarbon interceptor) and is discharged off-site to the Finglas Stream. The Finglas Stream ultimately flows into the River Tolka at Glasnevin.

Off-site discharges from the South Quarry are currently regulated by a discharge licence issued by Fingal County Council (Ref. WPW/F/075). If the waste licence review is successful, any future off-site discharges associated with backfilling and recovery activities at the South Quarry will be regulated by way of the amended EPA waste licence.

2.6 Preparatory / Initial Works

No site infrastructure construction and/or preparatory site works will be required prior to commencement of the backfilling and recovery activities at the South Quarry. Some minor works will be undertaken at the outset of the operational phase to facilitate soil waste intake and recovery activities. These will principally comprise:

- Upgrading and/or maintenance of existing haul roads and hardstanding areas as required to facilitate routing of HGV / trucks across the quarry complex;
- Construction of temporary access ramps (if required) to access initial backfill areas on the western side of the South Quarry; and
- Establishment of any additional environmental control and monitoring infrastructure required by the EPA waste licence in respect of backfilling / recovery activities.

2.7 South Quarry Restoration / Backfilling Scheme

Restoration of Huntstown South Quarry by backfilling with imported soils will extend in a number of 'lifts' from the quarry floor level up to original (former) ground level. On completion, the backfilled quarry will be returned to agricultural use, in keeping with the surrounding pastoral landscape.

Given the need to manage soil and stone imported as non-waste by-product separately to that managed as waste, two separate backfill areas will be established at the South Quarry, one for non-waste by-product on the eastern side and one for waste on the western side. The proposed demarcation line between the two zones will be delineated by the proposed waste licence boundary through the South Quarry, as indicated in Figure NTS-3.

The demarcation line between waste and by-product materials will be established using physical on-site markers across the quarry floor initially and thereafter by a dividing berm which will be raised (in stages) as the levels of imported soil and stone placed in the quarry rise over time. The dividing berms will be constructed solely of uncontaminated natural soils and/or crushed rock sourced from the quarry complex at Huntstown. No imported materials will be used to construct the separation berm.

Some limestone reserves have yet to be extracted at the South Quarry. Extraction activities at the western end of the quarry are expected to continue to the end of 2023 or early 2024. Subject to successful waste licence review, it is expected that the importation, placement and recovery of imported soil and stone on the western side of the quarry will commence in early 2023. Soil waste will initially be backfilled and recovered in the south-western corner of the quarry while some rock reserves continue to be extracted in the north-western corner.

The estimated volume of inert soil and stone material waste to be imported to backfill the western side of the South Quarry is 5,200,000m^3, equivalent to approximately 9,360,000 tonnes. Of this, a relatively small volume, estimated at no more than 50,000m^3 (90,000 tonnes) will be sourced from on-site stockpiles and/or perimeter screening berms for use in construction of the dividing berm between waste and by-product backfill areas and for final site levelling works required for the quarry restoration. An estimated 60,000 tonnes of crushed rock sourced on-site will also be required for construction of temporary haul roads and the dividing berm. All other materials required to backfill the quarry will need to be imported.

The duration of the soil waste recovery activities on the western side of the South Quarry will largely be dictated by the rate at which externally sourced inert soil and stone waste is imported to the facility. Assuming that the rate of waste intake is at or close to the maximum permitted rate of 750,000 tonnes per annum, it would be expected that the full complement of waste intake would be backfilled and recovered in 12½ years from commencement of operations early in 2023 (i.e. by mid-2035).

On completion of the backfilling activities at the South Quarry, the upper surface of imported and backfilled mineral soil will be levelled and contoured and a cover layer of subsoil and topsoil will be placed across it as part of the final restoration works. The upper surface will be harrowed and seeded in order to establish grass cover, promote stability and minimise soil erosion and dust generation.

On completion, all mobile plant and equipment associated with the quarry backfilling, recovery and restoration activities will be removed off-site. Any dedicated site accommodation, site infrastructure and/or services will also be progressively decommissioned and/or removed off-site. Any elements of shared infrastructure used by adjacent aggregate processing or concrete production activities will likely remain in place. The approved restoration scheme also provides for planting of hedgerows across the restored area in an effort to re-establish some of the former field boundaries which pre-dated quarry development.

2.8 Waste Operations and Procedures

There are operating procedures in place at the existing soil waste recovery facility (at the North Quarry) to ensure that all soil and stone waste forwarded for backfilling / recovery purposes is pre-sorted at source, is inert and free of construction or demolition waste or any non-hazardous / hazardous domestic, commercial or industrial wastes. Procedures have also been developed and implemented at the facility in respect of waste acceptance (or rejection), waste inspection, waste handling and waste testing. These existing procedures will be extended and applied to all soil waste intake for backfilling and recovery at the South Quarry.

There are also extensive environmental control procedures and environmental monitoring arrangements in place, around both the existing waste recovery facility and the wider quarry complex at Huntstown to ensure any noise, dust or water emissions are within permitted limits. Additional monitoring stations will be established as required around the South Quarry to monitor the environmental performance of the planned backfilling and recovery activities. Records of environmental monitoring and testing are maintained on-site and will be forwarded to the EPA / Fingal County Council as required.

3.0 EXISTING ENVIRONMENT, EFFECTS AND MITIGATION

3.1 Population and Human Health

Environmental Protection Agency (EPA) guidelines in relation to Environmental Impact Assessment (2017) indicate that the consideration of human health and population in EIA should address employment, human health and amenity issues. For the purposes of EIA, human health is considered in the light of relevant topics or 'pathways' addressed by the EIA Report, such as noise, air quality and water quality and acceptable limits for exposure.

The licensed waste facility, the proposed extension thereto and the Huntstown Quarry Complex straddle the townlands of Kilshane, Johnstown, Huntstown, Grange and Cappoge in County Dublin and lies within The Ward Electoral Division. The nearest population centre for the area is the Dublin suburb of Finglas which lies approximately 2.5km to the south-east.

There are a small number of isolated residential properties and farmsteads located along the local road network around the licensed site and quarry complex at Huntstown. There are also a number of established businesses located immediately to the west and south-west of the proposed licence extension area at the South Quarry. Existing land-use and/or land zoning and residential development in the vicinity of the application site is shown on Figure NTS-3.

3.1.1 Employment

The 2016 census figures indicate that for those living in The Ward and Fingal, employment by industry, follows a broadly regional pattern, with the highest participation in the commerce and trade and professional services sectors. A higher proportion of employees are engaged in the manufacturing and transport and communications sectors in The Ward and Fingal than in the wider Dublin Region.

The proposed transfer and re-location of backfilling and soil recovery to the western side of Huntstown South Quarry will have a minor positive effect on employment and will sustain employment for at least five full time personnel based at the existing licensed recovery facility. It will also indirectly support and sustain employment for hauliers servicing the construction and development industry, as well as providing occasional employment for sub-contractors, maintenance contractors and environmental monitoring personnel as required. It will also indirectly support and sustain both the local and regional economy through the provision of vital waste recovery capacity for excess soil and stone generated by construction and development activities.

3.1.2 Human Health

Quarrying activities have been established across Roadstone's landholding at Huntstown for over 45 years. It is considered that proposed recovery activities at the South Quarry will have similar impacts to ongoing quarry and waste recovery operations and are not likely to any have significant effects on human health. The main potential pathways for effects on human health arising from the planned recovery activities are noise, dust, surface water and groundwater emissions.

Existing perimeter screening berms and the separation distance to sensitive receptors both provide significant attenuation of any dust and noise emissions likely to be generated by the waste recovery activities. Additional control measures will also be implemented to prevent dust spread and mitigate noise emissions. Specific measures will be implemented to minimise the potential importation of contaminated soils to the recovery facility and to prevent fuel spillages or leaks, which could potentially affect surface water quality in local watercourses or groundwater quality in the underlying locally important aquifer.

With appropriate control measures in place, it is considered that potential adverse health effects are unlikely to occur. On cessation of operations, effects on noise and air quality would largely cease once

the quarry is restored to agricultural use. Any long-term effects on surface water or groundwater will be avoided through the implementation of precautionary measures during the operational phase.

3.1.3 Residential Amenity

The main potential pathways for impact on residential amenity are noise and dust emissions, as well as traffic-related impact. As noted previously, a number of measures will be in place to mitigate and control environmental emissions and to limit any associated nuisance impact at residences in the surrounding area.

As recovery activities at the South Quarry will proceed at half the rate currently permitted at the North Quarry, there will be a reduction in traffic movements along the existing R135 Regional Road and through the existing quarry complex, with a consequential reduction in related noise, dust and traffic emissions and impacts on residential amenity. Given the screening impact of existing perimeter berms and intervening vegetation, the waste recovery activities will have little or no visual impact on residential amenity.

As part of the proposed development, environmental monitoring will be undertaken around the South Quarry backfill and recovery area, specifically in respect of noise, dust, surface water and groundwater emissions. The monitoring programme will measure the actual impact of recovery activities over the operational and post closure phases and will identify if additional or more effective mitigation measures are necessary to comply with environmental emission limits set by the existing (2014) extractive planning permission or amended waste licence.

3.2 Biodiversity

This Ecological Impact Assessment has been carried out to inform the Environmental Impact Assessment process and a Waste Licence Review Application to the EPA in respect of planned backfilling and soil waste recovery activities at Huntstown South Quarry. The assessment was undertaken in accordance with guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM) and comprised :

- an initial desk-based study to collate any available ecological information in respect of the licence site and proposed extension thereto;
- an ecological walkover survey of the licence extension area by SLR personnel in March 2021; and
- the subsequent preparation of a report presenting an evaluation of the ecological value of the licence extension area and an assessment of likely impacts of soil waste recovery activities on biodiversity, habitats and species.

The existing licensed waste facility within the Huntstown Quarry Complex extends to 55 hectares (ha) and principally comprises the restoration / backfill areas at the North Quarry and West Quarry and the proposed construction and demolition (C&D) waste recovery facility in the north-eastern corner of the Roadstone landholding. The proposed extension to the existing licensed site area covers an area of 22.5hectares (ha) and principally comprises the western side of Huntstown South Quarry, some perimeter screening and overburden mounds, an existing network of surface water settlement lagoons and the existing network of internal paved and unpaved roads leading to and from the South Quarry.

3.2.1 Designated Sites

The existing licenced site area at Huntstown and the proposed extension thereto does not lie within or adjacent to any natural heritage site designated for nature conservation or subject to any nature conservation measures.

The closest Natura 2000 site is South Dublin Bay and River Tolka Estuary Special Protection Area (SPA, Site Code 004024), located approximately 9km to the south-east of the proposed licenced extension area. Malahide Estuary Special Areas of Conservation (SAC, Site Code 000205) and Malahide Estuary Special Protection Area (SPA, Site Code 004025) are both located approximately 10km to the north - east of the North Quarry.

There is no landscape or ecological connectivity between the proposed licence extension area at the South Quarry and the Malahide Estuary SAC and SPA and as such, the proposed backfilling and recovery activities at the South Quarry will have no impact on these sites.

The South Quarry is indirectly linked with the South Dublin Bay and River Tolka Estuary SPA via a hydrological pathway as a result of the off-site discharge of treated surface water run-off to the Finglas Stream, a tributary of the River Tolka that eventually outflows into the South Dublin Bay and River Tolka Estuary SPA. The Appropriate Assessment Screening Report prepared in support of the waste licence review application concluded that the planned backfilling / recovery activities at the quarry do not present any risk of direct loss or fragmentation of habitats within the SPA, will not have any direct or indirect impacts on the qualifying interests at the estuary, nor will they have any adverse impact on any existing conservation objectives.

3.2.2 Habitats and Species

The proposed backfilling and soil waste recovery activities will be located entirely within an active quarry that is comprised entirely of *ED4 – Active quarries and mines* habitat but also supports a number of sub-habitat types. The proposed licence extension area contains the following habitat types:

- ED4 – Active quarries and mines
- BL3 – Built ground and artificial surfaces
- ED2 - Spoil and bare ground
- FL8 – Other artificial pond and lakes
- GS2 – Dry meadows
- WD1 – Mixed broadleaved woodland
- WS1 – Scrub
- FL4 - Drainage ditch

The habitats within the proposed waste licence extension area are commonly occurring, widespread and resilient, and all of these were assessed as important at the '*site*' level except the mixed broadleaved woodland which was assessed as important at the '*local*' level.

There will be no loss of mixed broadleaved woodland within the licence extension area and the habitat will not be affected by the planned recovery activities.

It is considered that the licence extension area is of local level importance to one plant species (blue fleabane), amphibians (common frog and smooth newt) and nesting birds.

The habitat which supports the blue fleabane will not be affected by the proposed works.

There are known populations of common frog and smooth newt around the site area but the habitats they rely on will not be altered by the planned recovery activities.

The active quarries and mines habitat will ultimately be lost and restored by backfilling to former ground level, as provided for in the approved quarry restoration plan. When completed, the quarry restoration will result in a net increase in the amount of grassland and hedgerow within the local area.

On this basis, the residual effect of the planned backfilling and soil waste recovery activities at Huntstown South Quarry on the biodiversity and ecology of the site and the surrounding local area is predicted to be 'not significant'.

3.3 Land, Soils and Geology

The assessment of the likely environmental impact of the planned waste activities at Huntstown South Quarry on land, soil and geology is based on a desk study of the application site and surrounding area using published geological data, a site walkover of the lands and available ground investigation information, including well installation records, and a geophysical survey.

3.3.1 Land Use

The planned backfilling / soil waste recovery activities at the South Quarry will be entirely confined within the existing development footprint, on the western side of the quarry, and will not result in any increased land take or any change in existing land-use on surrounding lands. In the long term, once the quarry has been backfilled to its original (pre-extraction) ground level, the land will be restored to grassland, at least initially, and will thereby provide additional land resource and contribute to potential productive land use within the local area.

3.3.2 Soil and Bedrock Geology

Across the South Quarry footprint, topsoil (the original, upper layer of soil capable of sustaining vegetation and crop growth) and the underlying subsoil cover have previously been stripped and removed to facilitate the extraction of the underlying bedrock for production of aggregate and construction materials. The stripped materials have been placed in perimeter screening mounds / berms within and around the proposed licence extension area at Huntstown and will ultimately be re-used in completing the backfilling and final restoration of the quarry.

Soils in the vicinity of the Huntstown Quarry Complex are typically moderately-well drained, calcareous soils (derived from limestone) which are suitable for a range of agricultural activity, generally grassland or tillage. There are also some poorly drained calcareous soils which have more restricted uses, principally as seasonal grassland.

Published subsoil mapping indicates that much of the proposed backfill and recovery area was originally underlain by till derived from carboniferous limestone, although the north-central part of the South Quarry footprint and internal access road was underlain by bedrock at or close to the original ground surface.

The Huntstown Quarry Complex straddles a number of geological formations. The limestones of the Malahide Formation occur around the South Quarry, while the calcareous mudstones and argillaceous limestones of the Tober Colleen Formation occur to the north-west of it, around the centre of the quarry complex. There is a faulted contact running broadly west to east through the quarry complex, which means that the North Quarry is also generally underlain by the limestones of the Malahide Formation.

At the South Quarry, the limestone strata dip steeply to the north on the eastern side and to the north-west on the western side. The limestones in existing quarry exposures are dominated by well-bedded limestones. A review of the GSI Karst Database indicates that there are no known karst related landforms or features in the immediate vicinity of the South Quarry.

The progressive re-establishment of soil as a growth medium and carbon sink and the restoration of its original environmental functions across the restored South Quarry footprint will all provide a minor, positive long-term impact.

The generation of on-site traffic and the handling of imported soil wastes at the South Quarry could increase the risk of a leak or spillage of fuels and/or oils across the proposed licence extension area. There is also a risk that contaminated soil waste materials could be imported and backfilled, thereby introducing potential risk of ground contamination across the extended area.

By continuing to implement established best-practice soil waste and environmental management procedures, in line with those at the existing licensed facility (at the North Quarry), and by ensuring continued provision of the required resources to manage and control the backfilling and recovery activity, the potential risk of soil contamination from imported material or from potential fuel leaks or spills is considered low.

3.3.3 Geological Heritage

Consultations held previously with the Geological Survey of Ireland (GSI) established that the geological contact between the Waulsortian Limestones of the Feltrim Limestone Formation and the Tober Colleen Formation exposed in the roadway leading into the Central Quarry at Huntstown has been designated as a Geological Heritage Site as part of Theme 8 of the Irish Geological Heritage (IGH) Programme (Lower Carboniferous).

In time, the existing exposure could be designated as a Natural Heritage Area (NHA) on geological and geomorphological grounds under the Wildlife (Amendment) Act of 2000. The planned backfilling and soil waste recovery activities at the South Quarry will have no impact on this geological exposure.

3.4 Water

The bedrock formations underlying the South Quarry and the wider Huntstown Quarry complex are generally considered to be Locally Important (LI) karstified aquifers. Maps published by the EPA indicate that the South Quarry is located in an area with medium to extreme groundwater vulnerability status. This reflects the potential for rapid groundwater movement through thin (or non-existent) soil cover into the underlying bedrock aquifer.

Monitoring of groundwater levels around the South Quarry indicate that groundwater levels around the quarry are drawn down / depressed by quarry de-watering and pumping from sumps on the quarry floor. Sampling and testing of groundwater at monitoring wells across the quarry indicates that the quality of groundwater inflows is impacted by agricultural activity on surrounding lands (with slightly elevated ammoniacal nitrogen levels and coliforms being detected). Slightly elevated levels of some metals and traces of hydrocarbons (just above detection limits) were also detected in groundwater samples.

Published mapping indicates that the Huntstown quarry complex straddles two river catchments, that of the Ward River to the north and the Tolka River to the south. The entire South Quarry footprint lies within the Tolka catchment. Discharge from quarry is directed off-site via an open channel / drainage ditch to the Finglas Stream which flows along the eastern boundary of the Roadstone property holding. At the discharge point, almost the entire flow in the stream comprises discharge from the South Quarry. In the absence of any discharge from the quarry, it is likely that the stream would periodically run dry, with flows arising only during periods of heavy or prolonged rainfall.

The closest surface water quality monitoring point downstream of the South Quarry is located in the River Tolka at Glasnevin, approximately 4.5km south-east of the quarry. Testing indicates that the river at this location is of 'poor' status.

Off-site discharges from the established extraction activities at the South Quarry are currently regulated by way of a discharge licence from Fingal County Council (Ref. No WPW/F/075). The water quality results for discharge samples are generally within the licence limit values, with only very occasional exceedances of ammoniacal nitrogen and suspended solids being reported.

Potential impacts of the restoration works at the South Quarry and the planned importation, backfilling and recovery of inert soil and stone waste materials, have been assessed and it is considered that in the absence of mitigation measures, the proposed development could have the potential to negatively impact groundwater and surface water quality, specifically by increasing the risk of:

- contaminated soils being imported and placed within the quarry void;
- fuel or chemical spillages occurring; or
- discharges to the Finglas Stream (or Tolka River catchment) having high levels of suspended solids, organic contaminants or nutrients.

In order to control potential emissions to surface water and groundwater and protect existing water quality, a wide range of mitigation measures which are currently being successfully implemented at the North Quarry recovery facility will be extended to, and implemented at, the South Quarry. These measures include implementation of:

(i) surface water management / treatment plans;

(ii) established protocols around plant refuelling and maintenance activities; and

(iii) detailed soil waste acceptance and handling procedures in line with a waste acceptance plan approved by the EPA under the terms of the amended waste licence.

Backfilling of the South Quarry void will not have any adverse long-term impact on the local groundwater flow regime. It will not create any barrier to groundwater flow within the aquifer, nor will it reduce groundwater recharge or lead to a reduction in groundwater levels at off-site supply wells.

The pre-existing surface water and groundwater monitoring regimes around the South Quarry will remain in place for the duration of the soil waste recovery activities. Monitoring will continue up to the time all quarry restoration works are complete and for a post-closure period thereafter to be agreed with the EPA.

3.5 Air Quality

Given the inert nature of the materials being used to restore the South Quarry and the absence of biodegradeable (organic) wastes in the soil and stone waste imported for backfilling purposes, no landfill gas emissions will be generated.

The principal air quality impact associated with the planned restoration and backfilling activities at the South Quarry will be a risk of fugitive dust emissions. Emissions are likely to arise during drier weather periods as a result of:

(i) trafficking by HGVs over unpaved soil surfaces;

(ii) end-tipping of inert soil and stone; and

(iii) handling / compaction of inert soil.

In order to control potential dust rise and dust emissions, the existing mitigation measures being successfully implemented at the North Quarry recovery facility will be extended to, and implemented at the South Quarry. The key emission control measures comprise the following :

(i) dampening of unpaved haul roads and/or exposed soil surfaces using water sprinklers or by spraying water from a tractor drawn bowser, particularly during windy periods and/or dry spells;

(ii) placing and compacting soils immediately after being unloaded and minimising the amount of soil being stockpiled (if temporary stockpiling is required, they should be formed against quarry faces, as far as possible from nearby residences);

(iii) routing all HGVs leaving the facility through the existing wheelwash in order to remove and/or dampen any dust / mud material attaching to the undercarriage and to prevent transport of fine particulates off-site, onto the local public road network;

(iv) construction of internal haul roads across backfilled ground using minor quantities of imported aggregate; and

(v) planting the upper restored surface with grass as soon as possible after placing cover soil in order to minimise soil erosion and dust emissions.

The amount of dust or fines carried onto the public road network will be further reduced by periodic sweeping of paved internal roads and the R135 Regional Road around the quarry access (as and when required).

A detailed air quality assessment undertaken in respect of the planned recovery activities at the South Quarry concluded that in light of existing separation distances to receptors, the presence of existing perimeter screening berms and the implementation of proposed mitigation / control measures, the proposed activities would not have a dust deposition impact on assessed sensitive residential, commercial or ecological receptors located around the quarry.

Notwithstanding this, dust emissions levels will continue to be monitored at the South Quarry recovery facility and across the wider Huntstown quarry complex. Dust emissions are ultimately to be controlled by way of the existing extractive planning permission and an amended waste licence issued by the EPA.

3.6 Climate

Ireland has a typical maritime climate with relatively mild and moist winters and cool, cloudy summers. The prevailing winds are south westerly in direction. The climate is influenced by warm maritime air associated with the Gulf Stream which has the effect of moderating the climate, and results in high average annual humidity across the country.

An assessment of potential climate impact has been undertaken for the planned waste recovery activities having regard to the evolving baseline, climate hazards, project vulnerability and greenhouse gas (principally carbon dioxide, CO_2) emissions. The assessment identified climate change concerns in relation to the development, assessed effects and identified mitigation measures where possible. It also had regard to the likelihood and exposure / vulnerability of activities to climate hazards, both now and in the future, and included a climate hazard impact analysis.

The recovery activities are 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, storms and high winds.

Based on the scale and extent of the activities at the South Quarry, the greenhouse gas emissions are assessed as not significant in the 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.

3.7 Noise

Noise monitoring in and around the application site and Huntstown Quarry complex indicates that noise levels are elevated and that average ambient noise levels in the local area typically range between 60dBA L_{Aeq} and 75dBA L_{Aeq}, depending on location and proximity to the N2 Dual Carriageway and/or M50 motorway as well as the frequency of overhead aircraft movements along the flight path

leading in and out of Dublin Airport. These noise levels are consistent with daytime levels in busy urban areas close to heavily trafficked roads. Ambient noise levels are lower, between 51dBA L_{Aeq} and 54dBA L_{Aeq} at a farm enterprise located close to the eastern side of the South Quarry which is set back a significant distance from the surrounding local road network.

Noise prediction assessments indicate that there will be minimal, if any, increase in noise levels arising at nearby residences and a nearby farm enterprise under a worst-case scenario when all plant, equipment and HGVs are generating noise 100% of the time at the proposed licence boundary at the South Quarry recovery facility (rather than intermittently and some distance inside the licensed site area, as will most likely be the case in reality).

The resultant predicted (maximum) future noise levels at nearby sensitive receptors are comparable to, and only slightly elevated above, existing ambient levels, making it highly unlikely that any adverse noise impacts will be noticed or experienced by nearby residents / enterprises. It is therefore considered that mitigation measures to reduce the noise impacts of plant associated with the planned recovery facility are not strictly necessary.

Notwithstanding this, a number of measures will be implemented at the recovery facility to further mitigate potential noise impacts. These include retention and maintenance of existing perimeter screening berms, maintenance of plant, fitting of plant silencers, maintenance of road surfaces, control of traffic speed and unloading activities within the facility.

Noise levels around the South Quarry recovery facility and across the wider Huntstown quarry complex will continue to be monitored on a regular basis and reported to the Local Authority and EPA, in line with conditions attaching to the existing extractive planning permission and any amended waste licence issued by the EPA.

3.8 Material Assets

The South Quarry at Huntstown is well located in terms of access to the strategic national and regional road networks, principally the N2 Dual Carriageway between Dublin and Ashbourne, the M50 Motorway and the R135 Regional Road (the former N2 National Primary Road).

There are also several nationally important utilities in the vicinity of the quarry complex, including 100kV and 220kV power lines to the north and south-west running to the electricity sub-station at the N2/M50 interchange, a gas fired electricity generation plant and a gas transmission and distribution network. A potable water supply is provided to the local area by Local Authority water mains. Records indicate groundwater is extracted from two wells located in excess of 1km from the existing quarry.

The area surrounding Roadstone's landholding comprises a mix of rural agricultural lands to the north and east and large-scale industrial development in the form of several business / technology and industrial parks to the west and south-west. A limited amount of low-density residential housing is also present along the local road network.

Overall, the planned restoration works at the South Quarry and the associated soil waste intake, backfill and recovery activities will not result in any significant adverse short-term or long-term impact on any existing infrastructure, utilities or material assets in the surrounding area.

Relative to the existing, established waste intake and recovery rate at the North Quarry, the future rate at the South Quarry, will be halved, with consequential reductions in traffic levels and associated dust and noise emissions. Control measures on waste intake and handling of fuels will ensure that there is no adverse effect on groundwater quality at or beyond the South Quarry.

In the medium to long-term, the restoration activities will ultimately cease and the landform / land-use at the South Quarry will be similar to that which existed prior to quarry development. Notwithstanding the assessment that effects on assets will not be significant, any residual effects that may arise will ultimately cease after that time.

3.9 Cultural Heritage

A cultural heritage study in respect of the waste recovery facility at Huntstown South Quarry comprising a paper study and fieldwork was carried out to support the overall impact assessment of the proposed restoration / backfilling / recovery activities. A wide variety of paper, cartographic, photographic and archival sources was consulted. All the lands impacted by the planned restoration activities were visually inspected.

There are no upstanding Protected Structures within 1km of the proposed waste recovery facility at Huntstown South Quarry identified on the current Fingal County Development Plan 2017-2023 and as such, no protected structure will be directly or indirectly affected by the quarry backfilling activities.

Examination of the Record of Monuments and Places (RMP) for County Dublin and records held by the National Monuments Service (part of the Department of Housing, Local Government and Heritage) indicated that there are no Recorded Monuments within the proposed waste licence extension area around the planned waste recovery facility at the South Quarry. The closest Recorded Monument is the site of a castle / tower house in Cappoge townland which was demolished in the nineteenth century (RMP DU014-027--). The monument was located more than 400m south of the licence extension area.

The cultural heritage study concluded that the operation of the waste recovery facility at the South Quarry will have no direct impact on any other known archaeological, architectural or cultural heritage feature or item.

3.10 Landscape and Visual Impact

The existing licensed waste recovery facility at Huntstown Quarry and the proposed extension thereto are located on the urban fringe of a large city. The land-use / zoning map for the current Fingal County Development Plan (CDP) 2017-2023 designated all of the existing licence area (and the extension area) as suitable for 'heavy industry'. The proposed quarry restoration through backfilling and recovery of inert soil and stone waste is in compliance with stated zoning objectives and this land-use designation.

The proposed licence extension area is also designated as a Nature Development Area, i.e. an area with potential for biodiversity enhancement in the CDP. Notwithstanding this however, the principle of backfilling the Huntstown quarries was previously approved (under planning permission Ref. FW12-0022 and An Bord Pleanála (ABP) Ref. 241693). No views requiring protection are identified in the vicinity of Huntstown South Quarry on the Green Infrastructure Map published in the current CDP.

An assessment of landscape impact determined that the sensitivity of the low-lying landscape character surrounding the quarry complex at Huntstown is low and that the waste intake and recovery activities at the South Quarry will not alter the magnitude of those landscape effects that are already established and/or permitted. The landscape impact study concluded that there will be no additional landscape impact arising as a result of the planned activities, over and above which is already extant.

An assessment of the sensitivity of identified visual receptors surrounding the South Quarry and the wider quarry complex, combined with the likely magnitude of visual impacts associated with the planned backfilling and waste recovery activities (and in particular the reduction in the volume of HGV traffic movements across the public / internal road network relative to the ongoing activities at the North Quarry), concluded that there will be a minor change / improvement to established visual effects.

Given that the South Quarry and proposed licence extension area are located within the existing quarry complex, are already very well-screened by intervening vegetation, topography and site structures and are subject to the existing agreed restoration scheme, no additional mitigation measures are considered necessary in respect of landscape and visual effects.

The retention of all boundary hedgerows, as well as the ultimate restoration of the quarry to agricultural use and the re-establishment of (pre-extraction) hedgerow planting, will ensure that long-term, any development related visual impact will be eliminated.

3.11 Traffic

Waste recovery activities at Huntstown South Quarry will require the importation of approximately 9.36 million tonnes of soil and stone waste in total order to backfill the western side of the quarry void to its original ground level. This is equivalent to approximately 468,000 HGV / truck return trips (at 20 tonnes per load) in order to backfill the western side of the quarry void.

Assuming soil waste intake for backfilling and recovery activities at the South Quarry is sustained at a permitted maximum rate of 750,000 tonnes per annum, this would correspond to an average of:

- 37,500 HGV / truck return trips per year (assuming an average of 20 tonnes per load);
- 125 return trips per day (assuming 300 working days in a calendar year)
- 12 return trips per hour (assuming an 11-hour working day).

The backfilling and recovery activities at the South Quarry as proposed will therefore generate an average of 12 movements to and 12 movements from the quarry every hour of every working day (and a total of 24 movements per hour). This compares with the current average rate of 23 movements per hour in each direction (or a total of 46 movements per hour) which is currently permitted for the ongoing backfilling and recovery operations at the North Quarry.

Previous traffic impact assessments in respect of existing soil waste recovery activities at Huntstown indicated that, even at the (existing) elevated soil waste importation rate of 1,500,000 tonnes per annum to the North Quarry, junctions across the local road network, specifically:

(i) the existing R135 / Elm Road signalised junction;

(ii) the R135 / N2 Link Road roundabout (at Broghan);

(iii) the R135 / N2 Slip Road priority junction (at Coldwinters); and

(iv) the R135 / L3125 signalised junction (at Kilshane Cross)

would continue to operate within capacity out to 2035 (as in case of (i) and (ii) above) or would be minimally impacted with only slightly extended queues and delays during the AM and PM peak hours (as in case of (iii) and (iv) above).

The same traffic impact assessment indicated that the R135 Regional Road (also known as the North Road and the former N2 National Primary Road) would continue to operate at the required level of service at (elevated) present-day traffic levels, with a waste importation rate of 1,500,000 tonnes per annum to the North Quarry.

The transfer and re-location of soil waste recovery activities to Huntstown South Quarry will proceed at half the importation and recovery rate to that currently permitted for the same activities at the North Quarry.

The reduction in traffic movements will therefore result in a significant reduction in traffic movements along the existing R135 Regional Road and through the existing quarry complex at Huntstown. As a consequence, it is considered there is no requirement for detailed traffic modelling or impact assessment and these were therefore scoped out of the Environmental Impact Assessment.

Any roadside vegetation which could potentially impact on visibility splays will continue to be cut back as required in order to maintain visibility for HGV traffic exiting onto the R135 Regional Road.

On completion of backfilling and final restoration activities, there will be a permanent reduction in HGV traffic movements over the public road network with consequent improvement of the human environment.

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.

FIGURES

Figure NTS-1
Site Location

Figure NTS-2
Applicant's Landholding and Application Site

Figure NTS-3
Surrounding Land-use

Figure NTS-4
Site Layout Plan

Figure NTS-5
Restoration Plan – Huntstown Quarry Complex

Figure NTS-6
Proposed Final Contours – Huntstown South Quarry

Figure NTS-7
Restoration Cross-Sections

Figure NTS-8
Environmental Monitoring Locations

NOTES

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

2. CYAL50167032 (C) ORDNANCE SURVEY IRELAND / GOVERNMENT OF IRELAND

LEGEND

ROADSTONE LIMITED LAND INTEREST **(C. 171.8 HA)**

AMENDED WASTE LICENCE AREA (COMPRISING EXISTING LICENCE AREA AND PROPOSED EXTENSION) **(C. 77.5 HA)**

PROPOSED EXTENSION TO CURRENT WASTE LICENCE AREA

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EIAR NON-TECHNICAL SUMMARY

WASTE LICENCE REVIEW APPLICATION
NORTH ROAD, FINGLAS, DUBLIN 11

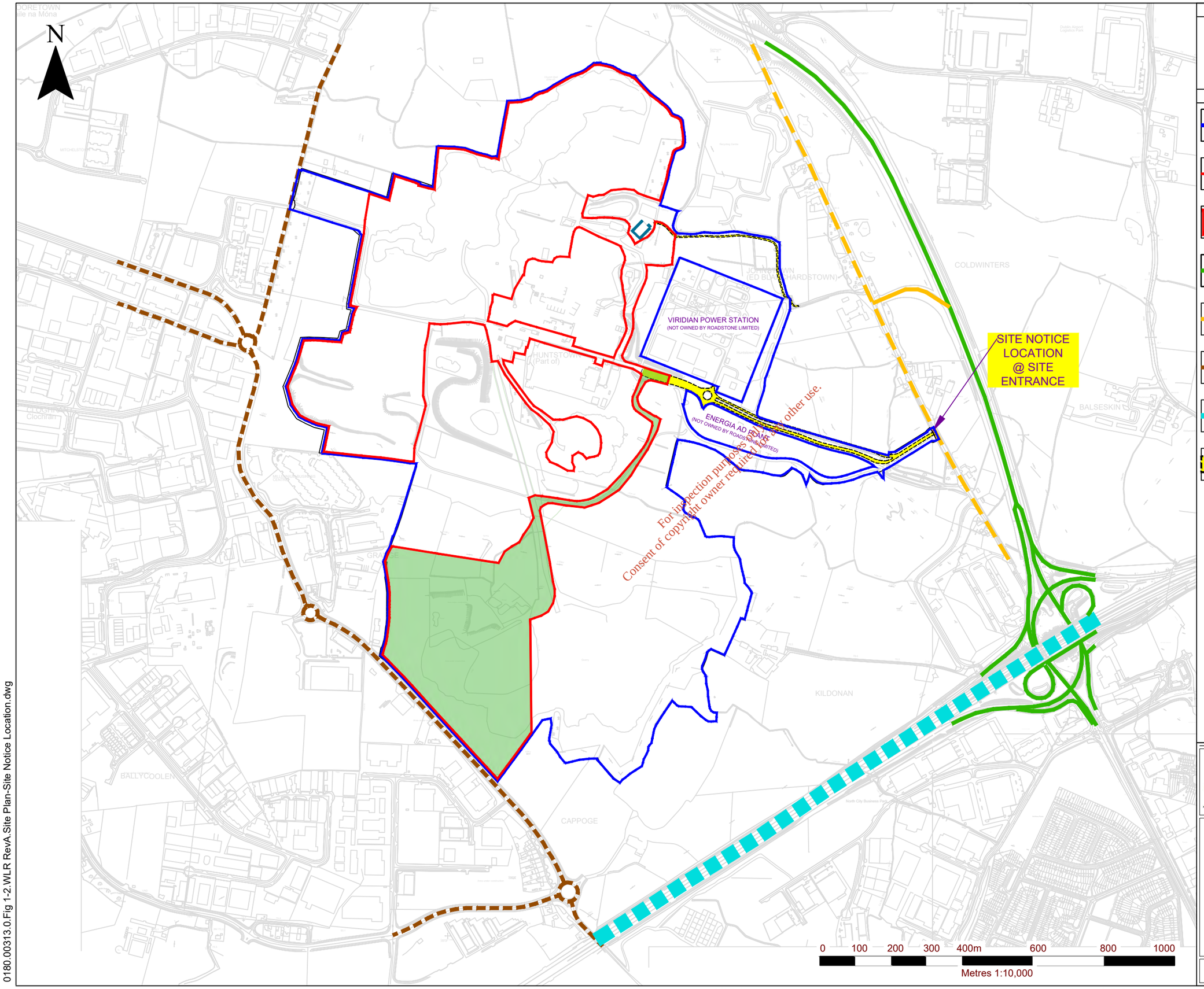
SITE LOCATION PLAN

FIGURE NTS-1

Scale	Date
1:50,000 @ A3	NOVEMBER 2021

0 500 1000 1500 2000m 3000 4000 5000
Metres 1:50,000

0180.00313.0.Fig 1-1.WLR RevA.Site Location Map.dwg



NOTES

1. EXTRACT FROM 1:2,500 ORDNANCE SURVEY DIGITAL SHEET **NO'S. 3062-A, 3062-B, 3062-C, 3062-D, 3063-A, 3063-C, 3130-A & 3130-B**.

2. **CYAL50167032** (C) ORDNANCE SURVEY IRELAND / GOVERNMENT OF IRELAND

LEGEND

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- R135 REGIONAL ROAD (NORTH ROAD)
- LOCAL ROAD
- M50 MOTORWAY
- RIGHT OF WAY

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EIAR NON-TECHNICAL SUMMARY

WASTE LICENCE REVIEW APPLICATION
NORTH ROAD, FINGLAS, DUBLIN 11

EXISTING WASTE LICENCE AREA AND PROPOSED EXTENSION AREA

FIGURE NTS-2

Scale: 1:10,000 @ A3

Date: NOVEMBER 2021

0180.00313.0.Fig 1-2.WLR RevA.Site Plan-Site Notice Location.dwg

N

KILSHANE KENNELS

NORTHWEST BUSINESS PARK

MITCHELSTOWN HOUSE

JAVA REPUBLIC

NORTHWEST BUSINESS PARK

J&D FURNITURE

MILLENIUM BUSINESS PARK

HUNTSTOWN BUSINESS PARK

ROSEMOUNT BUSINESS PARK

NATIONAL TRUCK RENTAL

HARVEY NORMAN WAREHOUSE

STADIUM BUSINESS PARK

PREMIER BUSINESS PARK

STABLES

VIRIDIAN POWER STATION
(NOT OWNED BY ROADSTONE LIMITED)

ENERGIA AD PLANT
(NOT OWNED BY ROADSTONE LIMITED)

DOGS TRUST IRELAND

BEECH VISTA GARDEN CENTRE

SITE NOTICE LOCATION

VETERINARY CLINIC

ESB 220 Kv STATION

0 100 200 300 400m 600 800 1000

Metres 1:10,000

NOTES

1. EXTRACT FROM 1:2,500 ORDNANCE SURVEY DIGITAL SHEET **NO'S. 3062-A, 3062-B, 3062-C, 3062-D, 3063-A, 3063-C, 3130-A & 3130-B**.

2. **CYAL50167032** (C) ORDNANCE SURVEY IRELAND / GOVERNMENT OF IRELAND

LEGEND

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- N2 DUAL CARRIAGEWAY
- R135 REGIONAL ROAD (NORTH ROAD)
- LOCAL ROAD
- M50 MOTORWAY
- RIGHT OF WAY
- OVERHEAD POWER LINES
- LOCATION OF NEAREST RESIDENCES

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EIAR NON-TECHNICAL SUMMARY

WASTE LICENCE REVIEW APPLICATION
NORTH ROAD, FINGLAS, DUBLIN 11

SURROUNDING LAND-USE

FIGURE NTS-3

Scale 1:10,000 @ A3

Date NOVEMBER 2021

0180.00313.0.Fig 1-3.WLR RevA.Surrounding Landuse Map.dwg

N

NORTH QUARRY

WEST QUARRY

CENTRAL QUARRY (W)

CENTRAL QUARRY (E)

SOUTH QUARRY

Waste Inspection Shed

Asphalt Plant

Water Settlement Ponds

Weighbridges

Concrete Batching Plant

Maintenance Workshop

Concrete Block Plant

Block Yard

Wheelwash

Security Hut

VIRIDIAN POWER STATION
(NOT OWNED BY ROADSTONE LIMITED)

ENERGIA AD PLANT
(NOT OWNED BY ROADSTONE LIMITED)

SITE NOTICE LOCATION @ SITE ENTRANCE

High Voltage Powerlines

Water Settlement Ponds

B

B'

A

A'

KILDONAN

MILLENNIUM BUSINESS CENTRE

0 50 100 150 200m 300 400 500

Metres 1:6000

NOTES

1. EXTRACT FROM 1:2,500 ORDNANCE SURVEY DIGITAL SHEET NO'S. 3062-A, 3062-B, 3062-C, 3062-D, 3063-A, 3063-C, 3130-A & 3130-B.

2. **CYAL50167032** (C) ORDNANCE SURVEY IRELAND / GOVERNMENT OF IRELAND

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- N2 DUAL CARRIAGEWAY
- R135 REGIONAL ROAD (NORTH ROAD)
- LOCAL ROAD
- M50 MOTORWAY
- INWARD HAUL ROUTE
- OUTWARD HAUL ROUTE

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EIAR NON-TECHNICAL SUMMARY

WASTE LICENCE REVIEW APPLICATION
NORTH ROAD, FINGLAS, DUBLIN 11

SITE LAYOUT PLAN

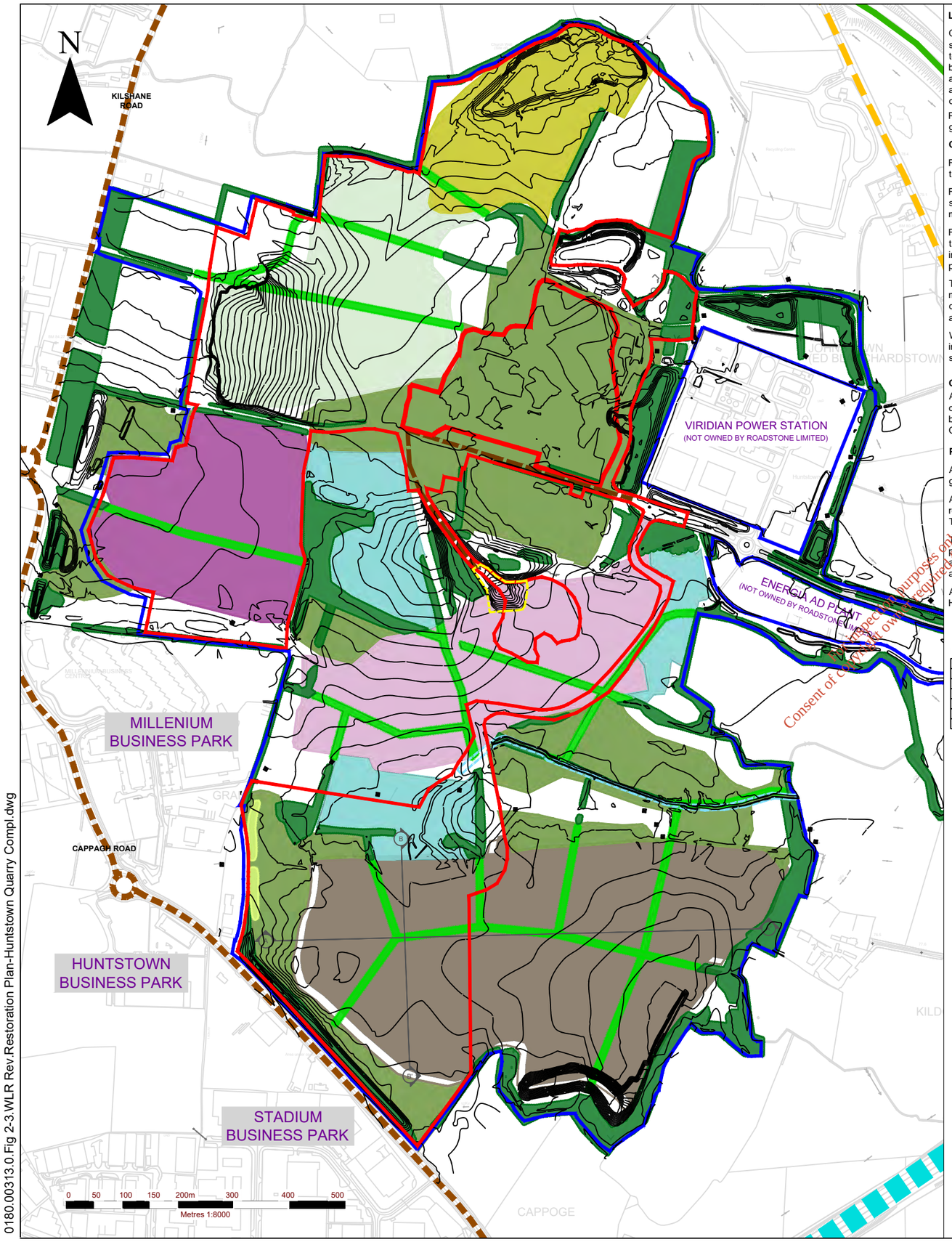
FIGURE NTS-4

Scale: 1:6,000 @ A3

Date: NOVEMBER 2021

0180.00313.0.Fig 2-2.WLR RevA.Proposed Waste Facility Layout.dwg

Last plotted: 23.11.2021 10:37:21



0180.00313.0.Fig 2-3.WLR Rev.Restoration Plan-Huntstown Quarry Compl.dwg

LANDSCAPE AND RESTORATION SCHEME

On completion of the extraction works, it is proposed to fill the quarry voids using imported inert soils and overburden and topsoil stored on site. The western quarry was restored without having been quarried for rock. The remaining quarry areas will be returned to agricultural after-use, with the exception of the Central Quarry which will be restored to calcareous grassland, to increase the biodiversity of the site and connect the existing wildlife areas. The final restored levels will be similar to the previous levels, prior to any extraction works taking place. Restoration will take place in a phased manner, as extraction operations cease in a given area and are subject to waste licenses being granted. In order to divide the large sites into smaller compartments, it is proposed to carry out native hedge planting in the location of former boundary lines, as indicated on the plan.

Please note that Roadstone Ltd are committed to pump all of the worked out quarry voids until such time that waste licenses are granted and the voids are filled to above the ground water level, in order to avoid large water bodies forming.

CULTIVATION, GRASS SEEDING AND ESTABLISHMENT (AGRICULTURAL GRASSLAND)

Following cessation of landform construction, topsoil and soil forming materials, from storage mounds on site, are to be spread over the areas to be restored to grassland. All soil handling to be carried out in accordance with current best pactice guidance.

Final cultivations will include raking the seeding area with a chain harrow or drag mat to form a true, even surface, suitable for subsequent maintenance by mechanical blade trimming and extending the cultivation into any adjacent existing areas to ensure full marrying in of levels and to achieve a fine tilth.

For all areas, an agricultural seed mix suitable for the intended land use will be evenly sown, in calm weather, at an appropriate time of year (for example September) at the rate recommended by the manufacturer. The seed to be used is to be fresh and for use in the season of seeding. A certificate is to be provided in respect of each consignment of seed mix giving the supplier's name, the proportions of constituents of the mixture and a signature of the representative of the supplier.

The contractor shall mix the seed well with bulking agent, e.g. dry sand, in order to assist an even distribution. The seed will be mixed well before application and frequently during application. The seed will be divided into two equal sowings in two transverse directions at the specified rates. After seeding, the soil will be lightly harrowed or surface rakeed and rolled lightly, for example with a Cambridge roller, to ensure a good contact between soil and seed.

When the grass is between 40mm and 75mm high, the contractor will remove debris and all stones and clay balls larger than 40mm in any dimensions and roll the area with a light roller. The area will be cut to approximately 35mm high. Spot treatment using a selective herbicide shall be applied to pernicious agricultural weeds, such as thistle, docks and ragworth.

CALCAREOUS GRASSLAND

As far as practically possible, the in-filled Central Quarry will be restored to fields supporting calcareous grassland. As the landform construction is nearing completion, guidance will be sought from an experienced ecological consultant. It is envisaged that it should be possible to collect seed and/or take hay cuts for seeding from the existing fields along the eastern boundary of the Central Quarry. In any case no fertiliser will be applied to this area, to ensure the best chance of developing a species rich sward.

PROPOSED NATIVE WOODLAND SCREEN AND HEDGE PLANTING

Approximately 3,000 sq.m. of woodland screen planting is to be carried out and it to be planted at 1.5m centres, in same species groups of 20-30. Groups are to be randomly spread throughout the planting blocks.

Approximately 4,800 lin.m. of hedge will be planted in total. Hedges are to be planted in two staggered rows, with plants within each row 50cm apart (i.e. 4 plants per m) and rows 50cm apart. Feathered trees to be planted at distances of 8-16m and staked. Transplants to be planted randomly in same species groups of 10-20.

Trees shall conform to BS3936 for nursery stock and shall be supplied true to size and species name, as per the tables below. All proposed plant species are native and will be sourced locally. The percentage of berry producing trees is low, in order not to attract a large amount of birds, which could result in a hazard for Dublin Airport. Planting is to take place between the months of November and March.

All plant handling, planting works and aftercare will be carried out in accordance with the CPSE Recommendations for Plant Handling. Establishment maintenance to be carried out for 24 months following the completion of each planting phase.

Native Woodland Screen Planting Mix

No.	Plant Name	Common Name	Height (cm)	Age/Pot Size	%
Transplants					
390	Alnus glutinosa	Common Alder	60-90	1+1	30
260	Corylus avellana	Hazel	60-90	1+0	20
390	Euonymus europaeus	Spindle Tree	60-90	1+1	30
130	Quercus robur	Pedunculate Oak	60-90	1+1	10
130	Salix caprea	Goat Willow	60-120	0+1	10

Native Hedge Planting Mix

No.	Plant Name	Common Name	Height (cm)	Age/Pot Size	%
Feathered Trees					
190	Alnus glutinosa	Common Alder	150-175	2xTR	1
190	Quercus robur	Pedunculate Oak	150-175	2xTR	1
Transplants					
3450	Alnus glutinosa	Common Alder	60-90	1+1	18
4800	Corylus avellana	Hazel	60-90	1+0	25
2880	Crataegus monogyna	Hawthorn	60-90	1+1	15
4800	Euonymus europaeus	Spindle Tree	60-90	1+1	25
1920	Prunus spinosa	Blackthorn	60-90	1+0	10
960	Sorbus aucuparia	Rowan	60-90	1+1	5

PROPOSED RESTORATION FEATURES

- PROCESSING AREA, DISTURBED GROUND & OVERBURDEN AREAS TO BE LEVELLED AND RESTORED TO AGRICULTURAL LAND
- CENTRAL QUARRY AREA TO BE BACK-FILLED AND RESTORED TO CALCAREOUS GRASSLAND SUBJECT TO FUTURE WASTE LICENCE APPLICATION
- PROPOSED HEDGEROWS IN THE APPROXIMATE LOCATIONS OF FORMER BOUNDARY LINES
- RETAINED QUARRY FACE FOR FUTURE ACCESS TO VIEW TOBER COLLEEN FORMATION OVERLAYING WAULSORTIAN LIMESTONE
- RETAINED INTERNAL ACCESS ROAD TO VIEW QUARRY FACE

NOTES

Extraction form OSI Discovery Series Map No. 50
CYAL50167032 (C) Ordnance Survey Ireland / Government of Ireland

TOPOGRAPHIC SURVEY PREPARED BY FUGRO BKS BASED ON MAY 2009 AERIAL PHOTOGRAPHY

ALSO REFER TO FIGURE 2-5: RESTORATION SECTIONS (SOUTHERN QUARRY)

LEGEND

- ROADSTONE LIMITED LAND INTEREST **(C. 171.8 HA)**
- AMENDED WASTE LICENCE AREA (COMPRISING EXISTING LICENCE AREA AND PROPOSED EXTENSION) **(C. 77.5 HA)**
- HEDGEROWS AND SCREEN PLANTING BELTS
- WILDLIFE AREAS
- AREA PREVIOUSLY BACK-FILLED UNDER WASTE FACILITY PERMITS
- STREAM CORRIDOR FROM WILDLIFE AREA TO EASTERN BOUNDARY OF SITE

PROPOSED LANDSCAPE FEATURES

- PROPOSED WOODLAND SCREEN PLANTING ALONG PARTS OF WESTERN BOUNDARY

PROPOSED RESTORATION FEATURES

- PROPOSED RESTORATION CONTOURS
- NORTH QUARRY AREA CURRENTLY BEING BACK-FILLED AND RESTORED TO AGRICULTURAL LAND (UNDER EXISTING WASTE LICENCE REF: W0277-03)
- RECENTLY BACKFILLED WESTERN QUARRY AREA, RESTORED TO AGRICULTURAL LAND (UNDER EXISTING WASTE LICENCE REF: W0277-03)
- SOUTH QUARRY AREA TO BE BACKFILLED AND RESTORED TO AGRICULTURAL LAND (SUBJECT TO WASTE LICENCE REVIEW APPLICATION)

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EIAR NON-TECHNICAL SUMMARY

WASTE LICENCE REVIEW APPLICATION
NORTH ROAD, FINGLAS, DUBLIN 11

RESTORATION PLAN
HUNTSTOWN QUARRY COMPLEX

FIGURE NTS-5

Scale	Date
1:8,000 @ A3	NOVEMBER 2021

WEST QUARRY

CENTRAL QUARRY (W)

CENTRAL QUARRY (E)

SOUTH QUARRY

Concrete Batching Plant

Maintenance Workshop

Concrete Block Plant

Block Yard

Wheelwash

Security Hut

ENERGIA AD PLANT
(NOT OWNED BY ROADSTONE LIMITED)

Perimeter Screening Berm

A

A'

B

B'

GRANGE

KILDONAN

CAPPOGE

0 50 100 150 200m 300 400 500

Metres 1:5000

0180.00313.0.Fig 2-4.WLR RevA.South Quarry-Proposed Final Contours.dwg

NOTES

1. EXTRACT FROM 1:2,500 ORDNANCE SURVEY DIGITAL SHEET **NO'S. 3062-A, 3062-B, 3062-C, 3062-D, 3063-A, 3063-C, 3130-A & 3130-B**.

2. **CYAL50167032** (C) ORDNANCE SURVEY IRELAND / GOVERNMENT OF IRELAND

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- N2 DUAL CARRIAGEWAY
- R135 REGIONAL ROAD (NORTH ROAD)
- LOCAL ROAD
- M50 MOTORWAY
- PROPOSED FINAL CONTOURS FOR EXTENSION TO CURRENT WASTE LICENSE AREA

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EIAR NON-TECHNICAL SUMMARY

WASTE LICENCE REVIEW APPLICATION
NORTH ROAD, FINGLAS, DUBLIN 11

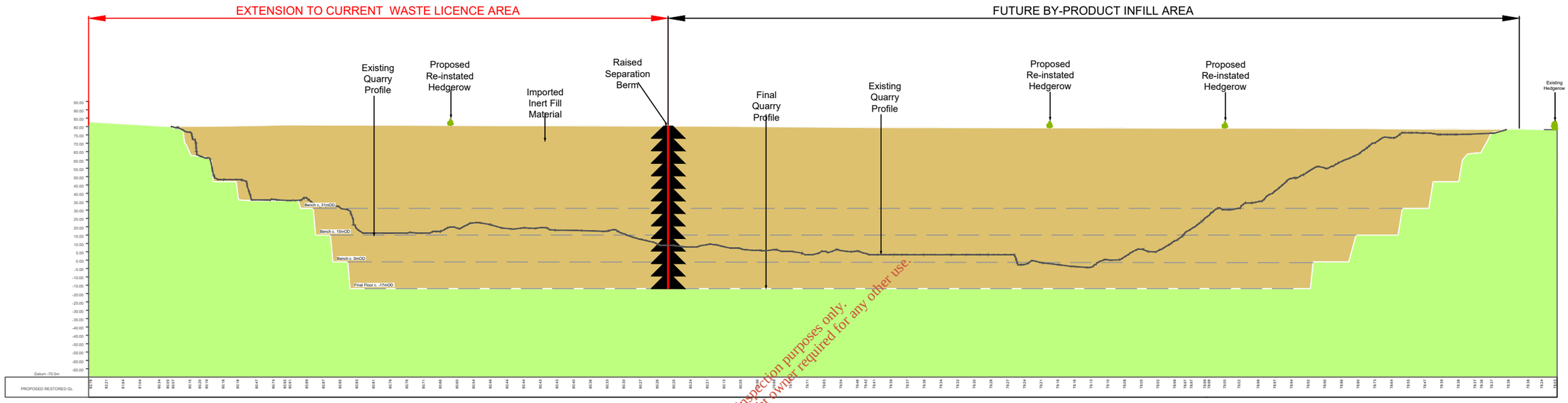
SOUTH QUARRY
PROPOSED FINAL CONTOURS

FIGURE NTS-6

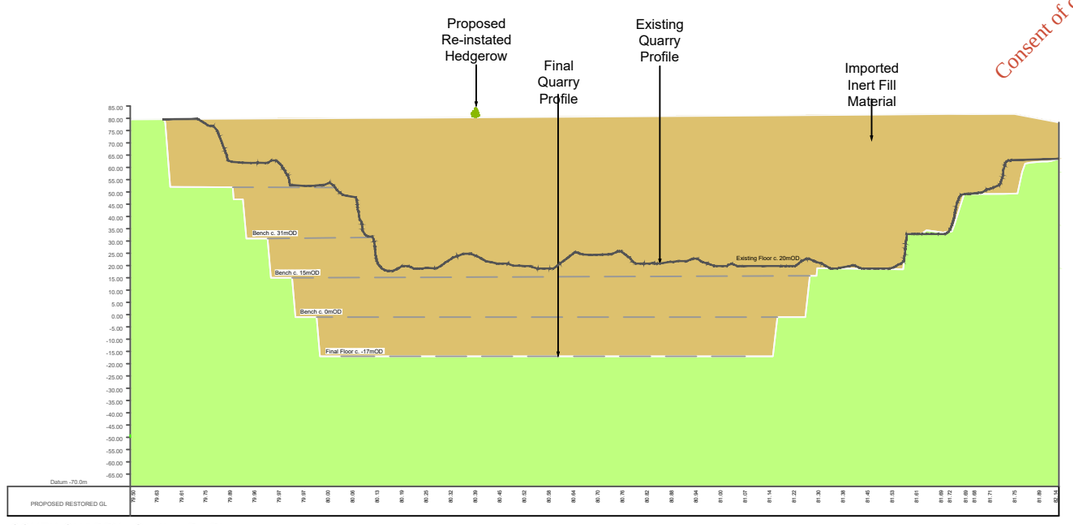
Scale	Date
1:5,000 @ A3	NOVEMBER 2021

NOTES

Refer to Fig 2-4 for the Cross Section Locations



SOUTH QUARRY - Section A - A'



SOUTH QUARRY - Section B - B'

0 80m 200

Metres 1:2500

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EIAR NON-TECHNICAL SUMMARY

ENVIRONMENTAL IMPACT ASSESSMENT REPORT

WASTE LICENCE REVIEW APPLICATION
NORTH ROAD, FINGLAS, DUBLIN 11

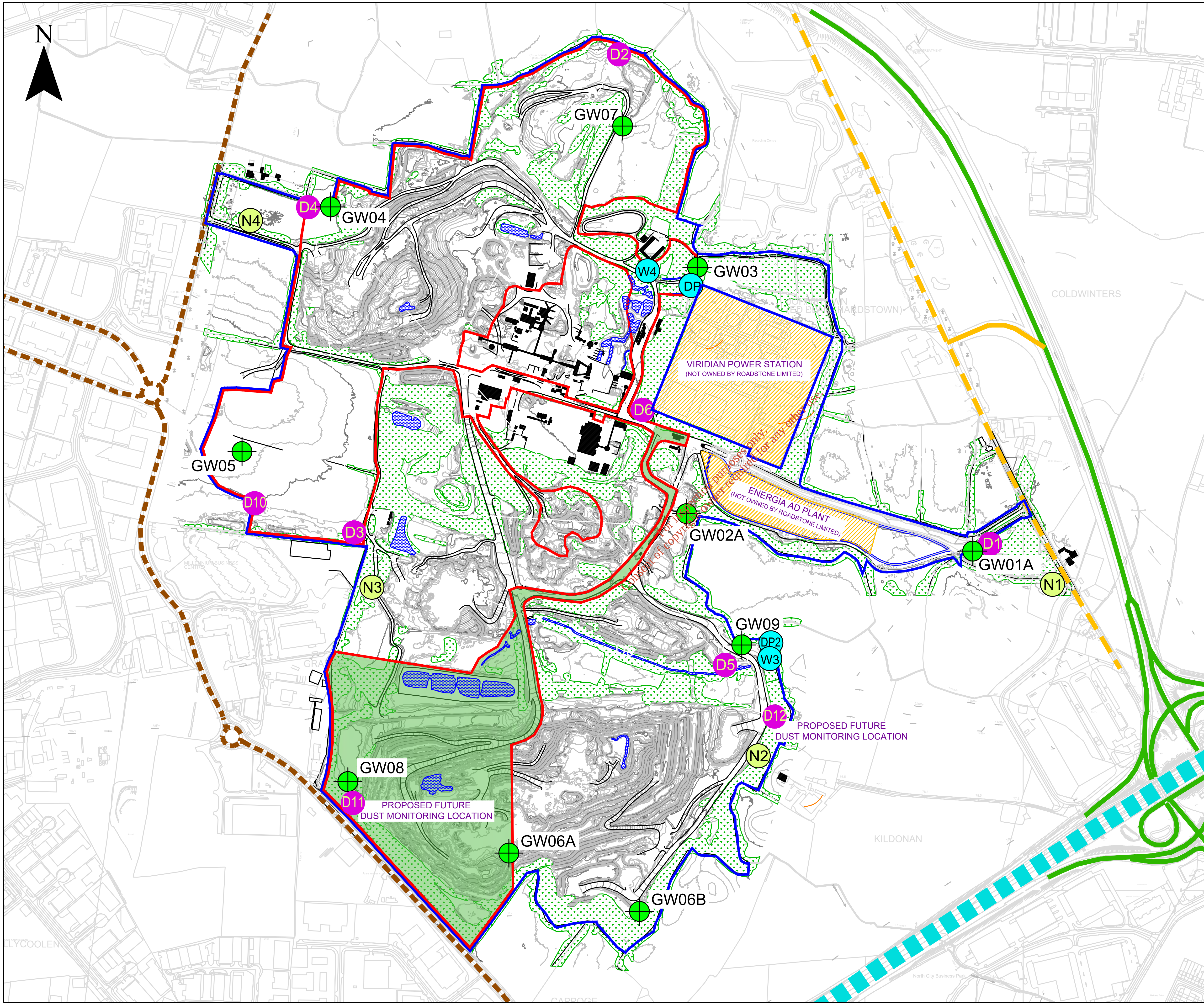
SOUTH QUARRY
RESTORATION CROSS SECTION

FIGURE NTS-7

Scale: 1:2,500 @ A3

Date: NOVEMBER 2021

0180.00313.0.Fig 2-5.WLR RevA.South Quarry-Restoration Cross Sectio.dwg



NOTES

1. EXTRACT FROM 1:2,500 ORDNANCE SURVEY DIGITAL SHEET NO'S. 3062-A, 3062-B, 3062-C, 3062-D, 3063-A, 3063-C, 3130-A & 3130-B.

2. CYAL50167032 (C) ORDNANCE SURVEY IRELAND / GOVERNMENT OF IRELAND

LEGEND

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- N2 DUAL CARRIAGEWAY
- R135 REGIONAL ROAD (NORTH ROAD)
- LOCAL ROAD
- ON-SITE GROUNDWATER WELL LOCATIONS
- PRIVATE WELLS
- HUNTSTOWN POWER STATION WELL LOCATIONS
- N1 NOISE MONITORING LOCATION
- D1 DUST MONITORING LOCATION
- W3 SURFACE WATER MONITORING LOCATION

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EIAR NON-TECHNICAL SUMMARY

WASTE LICENCE REVIEW APPLICATION
NORTH ROAD, FINGLAS, DUBLIN 11

ENVIRONMENTAL MONITORING LOCATION

FIGURE NTS-8

Scale	Date
1:8,000 @ A3	NOVEMBER 2021

0180.00313.0.Fig 2-8.WLR.Environmental Monitoring Locations.dwg

EUROPEAN OFFICES

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CARDIFF
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CHELMSFORD
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EDINBURGH
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EXETER
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