

JSPE

J Sheils Planning & Environmental Ltd

KIERNAN SAND & GRAVEL LTD.

FOXTOWN QUARRY

FOXTOWN TOWNLAND

SUMMERHILL

Co. MEATH

Waste Management Licence Application

W0262-01

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1. INTRODUCTION

1.1 GENERAL BACKGROUND

Projects likely to have significant effects on the environment *by virtue of their nature, size and location* are subject to the requirement for an Environmental Impact Assessment (EIA). The EIA is a systematic process undertaken to identify and evaluate the potential environmental impact of proposed projects. The EIA also seeks to consider alternatives and propose mitigation measures to ensure the development is carried out within recognised and accepted standards. . This EIS pertains to the continued operation of a Waste Recovery Facility (WRF) located at Foxtown Townland, Summerhill, Co. Meath.

Kiernan Sand and Gravel Ltd are a family run business that has been supplying building materials in the form of aggregates in County Meath since the early 1960's. The existing quarry is being operated and restored using imported inert soils in accordance with conditions imposed under Section 261 (6)(a)(i) of the Planning and Development Act 2000 i.e. P.A. Reg. Ref QY/48 (QC 17.QC2113). The quarry site is being progressively restored in accordance with a Phased Restoration Scheme using imported soil and stone subject to a Waste Management Permit granted by Meath County Council (Ref. No. WMP 2007/22).

The nature of the development is the continued phased restoration of a sand and gravel pit using imported inert soils, stone, and recovery of inert construction and demolition waste. It was proposed in the original Waste Licence application that circa 74,000 cubic metres per annum of inert materials was to be accepted to site. Changes in Waste Management legislation which came into effect in June 2008 now require a Waste Management Licence issued by the Environmental Protection Agency (EPA) in order to operate a waste recovery facility with a lifetime total intake volume in excess of 100,000 tonnes. The waste licence application (W0262-01) was submitted on 13/02/2009. The Agency considers that the application must be made subject to an environmental impact assessment (EIA). As such the environmental impact statement will be submitted to the Agency with the application.

1.2 SITE LOCATION

The site is located within the Townland of Foxtown, c. 6km southeast of Trim, and c. 4.5km north northeast of Summerhill, and c. 1.75km west of Kiltale, on the west side of an unnamed local road, (Refer to Figure A1.0, *EIS Section 2 Figures*). The unnamed road runs from Scurlockstown Townland, c. 2.5km east of Trim in a southeasterly direction, following a meandering topographic ridge known as the Trim Esker, except near its southern terminus in Arodstown Townland c. 4km east of Summerhill. The road connects the L2204 near Trim to the L2210 near Summerhill and runs roughly equidistant between Regional Roads R154 and R158.

1.3 APPLICANT

Kiernan Sand and Gravel is owned, operated and managed by Messrs. James V. Kiernan and James Kiernan of Foxtown, Summerhill, Co. Meath. The company has been in business for approximately 50 years

1.4 ANY DIFFICULTIES IN COMPILING SPECIFIED INFORMATION

No major difficulties arising from either deficiencies in technology, knowledge or expertise were encountered in the preparation of the EIS. The EIS has been prepared by consultants with considerable experience in the compilation of waste licence applications and the carrying out of Environmental Impact Assessments (EIA's) for waste management developments.

2. DESCRIPTION OF THE DEVELOPMENT

2.1 ALTERNATIVES EXAMINED

It is standard practice in the preparation of an EIS to consider alternative project locations, designs and processes with regards to environmental effects.

The existing quarry is being operated and restored using imported inert soils in accordance with conditions imposed under Section 261 (6)(a)(i) of the Planning and Development Act 2000 i.e. P.A. Reg. Ref QY/48 (QC 17.QC2113) and as such it was not considered particularly relevant in this case for the applicant to identify and appraise the merits of alternative sites for the proposed material recovery activity. It is the existence of this requirement for reinstatement using inert materials, and the environmental gain derived therefrom, that constitutes the principal qualification of the application site.

Existing quarries and pits whether worked out or in operation are potentially useful sites for the management of C&D waste. The inert soil can be used to restore the topographical contours. Local authorities should therefore encourage the use of quarries / pits for sustainable management of C&D waste as opposed to using agricultural land, with an emphasis on resource recovery. Reclamation of the Foxtown quarry will result in infilling of a large exposed void and restoration of the disturbed landscape to its original pre-extraction condition, with emplacement of soil cover to protect the underlying groundwater.

The design of the facility is driven by the basic processes of recovery of C&D waste, with the recovery by backfilling of otherwise unusable materials to meet the requirement to reclaim the quarry back to the pre-extraction condition. Because the waste recovery facility will share much of the infrastructure of the quarry, design alternatives are constrained by the design of the existing facility and the imperative of achieving maximum synergy. The design and siting of these areas is driven by the need to maximise operational efficiencies and economic return, and offers the greatest latitude in facility design.

Alternative processes for the recovery of C&D waste other than by simple combinations of mechanical separation, sorting, crushing, screening and/or washing, are not apparent. Waste recovery lies at the second lowest tier in the European Waste Hierarchy, and as such is the

process of last resort prior to disposal. Process alternatives diminish as we descend the tiers of the hierarchy from the pinnacle of prevention to reduction, reuse, recycling, recovery and ultimately to disposal/landfill at the base.

Waste recovery by simple mechanical means of usable product, and backfilling unusable waste represents the optimum economic utilisation of inert C&D waste. Diverting waste material out of the disposal stream into reuse off-site including secondary aggregates, and the improvement of land as part of the reinstatement of a quarry, with resulting reduction in primary resource utilisation, offer significant environmental gains.

2.2 CHARACTERISTICS OF THE PROJECT

2.2.1 THE EXISTING SITE

The site is located within the Townland of Foxtown, c. 6km southeast of Trim, and c. 4.5km north northeast of Summerhill, and c. 1.75km west of Kiltale, on the west side of an unnamed local road.

Access to the site is gained from the unnamed local road adjoining the eastern site boundary. This Local Road leads to the R154 Regional road at the village of Kiltale. A branch Local Road leads from this Local Road to the R158 Summerhill to Trim road.

The site of the quarry and WRF comprise the entire landholding of c. 5.2 ha, owned by the applicant Kiernan Sand and Gravel Ltd.

Residential property in the area typically comprises one-off single residences and farmsteads along public roads or at the end of lanes off the latter. There are no residences within the landholding, there are four nearby residences within 75m on the eastern side of the unnamed local road, and an additional 12 (i.e. total of 16) residences within 500m of the site.

2.2.2 THE PROPOSED DEVELOPMENT

Kiernan Sand and Gravel Ltd, Foxtown Townland, Summerhill, County Meath has applied to the Environmental Protection Agency for a waste licence for the continued operation of a waste recovery facility on lands at Foxtown Townland, Summerhill, County Meath.

The nature of the development is the continued phased restoration of a sand and gravel pit using imported inert soils, stone, and recovery of inert construction and demolition waste.

Due to the economic recession the actual volumes received to date were considerably less than originally envisaged. The actual void space backfilled has been estimated at c.142,500 m³ since 2008 as opposed to the estimated void space in the original waste licence application of 502,500 m³. It is expected that volumes will increase as the economic recovery continues but it is expected that the volumes will still be relatively less, up to c. 40,000 cubic metres per annum of inert materials will be accepted to site. It is estimated that only c. 10,000 tonnes per annum of inert construction and demolition waste will be recovered at the facility. Recovered material will be used for internal haul roads and/or dispatched off site. Any small quantities of timber, plastic, paper and steel will be separated for recovery and/or disposal offsite.

Given the lower than expected volumes the applicant also decided to restore phase 1 to a lower profile than originally anticipated so that these lands could be returned to beneficial agricultural use at the earliest opportunity. Phase 1 is now largely complete, whilst the remaining phases will be restored to agricultural/ forestry in accordance with the revised phasing scheme. Redundant structures, plant equipment and stockpiles will be removed from site on cessation of pit activity.

Mitigation measures to alleviate any adverse impacts from the facility on the environment have been incorporated into the design to ensure that the facility can be operated within the accepted standards for this type of development.

Based on the proposed scheme and an expected backfilling rate of between 35,000 to c. 40,000 cubic metres per annum, it is considered that it will take approximately 8 years to complete the backfilling operations. An additional 6 months to a year should be allowed to complete final restoration to agricultural/woodland. Ultimately the life of the WRF will be determined by demand for recovery of inert C&D waste and therefore be dependent on future market conditions.

The nature of the development is the continued phased restoration of a sand and gravel pit using imported inert soil and stone, and recovery of inert construction and demolition waste. As such all of the necessary infrastructure in relation to the operation of the WRF is in place. The location of all activities, buildings and facilities at the Recovery Facility are shown on the Site Plan Figure B 2.1 - Rev A.

2.3 DESCRIPTION OF THE PROPOSED OPERATIONS

Kiernan Sand and Gravel is owned, operated and managed by Messrs. James V. Kiernan and James Kiernan of Foxtown, Summerhill, Co. Meath. The company has been in business for approximately 50 years.

It is proposed that working hours at the application site will be that waste is accepted at the site between the hours of 08:00 hours to 18:00 hours on working days (Monday to Friday) and 08:00 hours to 14:00 hours on Saturday. These hours of operation are as stipulated in Waste Management Permit No. 2007/22. No operations will be carried out on Sundays or public holidays.

Kiernan Sand and Gravel Ltd employ two directly. An additional temporary employee is hired occasionally. The WRF requires one person operating a bull-dozer/back-hoe excavator and one general foreman to monitor and inspect the quality and suitability of imported materials being brought to the site for recovery. It is expected that an additional general operative will be appointed subject to an upturn in the economy and construction activity.

The facility's infrastructural requirements includes internal roads, plant and machinery, site office, workshop, etc. All of these are already in place and represent common infrastructure shared between the quarry and WRF. Provision of hard standing areas, quarantine material and residual waste is an additional requirement of the MRTF, and will be sited to maximise operational efficiencies. The existing quarry plant including mobile crushing and screening plant will be utilised to process C&D waste to produce saleable aggregates. The proposed facility site layout is shown by EIS Figure D.1.1 – Rev. A.

The boundaries of the site are secure being established hedgerows and stock proof fencing. The site benefits from being bounded to the east by the local county road, to the west by agricultural lands. The site entrance gates are locked outside of normal working hours and public warning notices are posted at appropriate locations along the site boundary.

Access to the site will be gained through the existing entrance onto the Local Road. All materials will be transported to and from the application site using heavy goods vehicles (HGV's). Imported clean construction and demolition waste (concrete and brick) is used to construct internal haul roads as required and the remainder is recycled and sold off site. The only hardstanding area on site relates to the existing workshop on site.

A Bulldozer, excavator, loading shovel (Sand & Gravel Pit) and sweeper are all used intermittently on site. There is no weighbridge on site. Trucks entering the site are typically 4 axle 9 cu.m capacity rigid bodied tippers. Details with respect to truck loads and volume of inert materials received are recorded in a log book at the site inspection office.

Trucks entering the site report to the site office where each load will be inspected as to its suitability to be recovered on site. All trucks exiting the site will leave through the existing wheelwash facility. Traffic direction signs, warning signs, speed limit signs are established throughout the site.

As only inert materials are to be imported to site there will be no source of possible contamination of surface waters. There are no surface water courses adjoining the site. Surface water-off within the site percolates to ground through the floor of the sand and gravel pit into the underlying limestone bedrock.

Recovery and re-cycling activities at the application site involves tipping of previously stockpiled 'unprocessed' material into a semi-mobile crushing & processing plant using a front-end loader. Material produced by the plant is then transported by front-end loader to 'processed' stockpiles. Recycled material is used for internal haul roads and/or dispatched offsite.

No sorting of materials other than separation of rebar from concrete will be undertaken on site as all material will be sorted and segregated at source before being brought to the application site. Rebar (reinforced steel) separated from concrete will be stored in the designated quarantine area awaiting removal off-site by a licensed scrap merchant.

The site has a designated area for the quarantine of any inappropriate materials which may be found within loads accepted at the site. Skips have been provided within the designated quarantine area for the temporary storage of any inappropriate materials discovered (e.g. glass, plastic, timber, steel, etc). The materials are routinely removed by a licensed waste disposal contractor to an appropriate disposal facility.

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

It is proposed to reclaim the lands to a condition / gradient suitable for agriculture/forestry. Good quality imported soil will be conserved wherever possible to provide the subsoil/top-soil capping.

On completion of each phase of development final restoration including grading, planting/seeding and landscaping will be carried out. Final restoration is dependent on the availability of good topsoil/subsoil and subject to suitable weather conditions. In order to allow for continuity of operations it is necessary to have a certain overlap between phases. The final contours and topography for the site is shown by the Final Landform Plan *Figure B.2.4 - Rev A* and *Cross Sections B.2.5 – Rev A*.

In order to access the pit floor the haul roads shall be constructed using suitable imported material (i.e. brick, block, concrete and stone). The proper construction of the haul road will help minimise the amount of mud and dust generated by lorries entering and leaving the site.

The final landform will comprise a ridge running northwest to southeast which will be similar in profile to the original esker ridge that ran through the lands (Refer to *Figure B.2.4 – Rev A*).

It was originally estimated in 2009 that c. 20,000 tonnes per annum of inert construction and demolition waste would be recovered at the facility. It is now estimated that only c. 10,000 tonnes per annum of inert construction and demolition waste will be recovered at the facility.

No sorting of materials other than separation of rebar from concrete will be undertaken on site as all material will be sorted and segregated at source before being brought to the application site. Rebar (reinforced steel) separated from concrete will be stored in a skip prior in the designated quarantine area awaiting removal off-site by a licensed scrap merchant.

The main potential sources of emissions from an inert waste recovery facility would be from noise or dust associated with the movement, handling and placement of materials. Possible other emissions to the atmosphere would be from machinery exhaust fumes and also possible emissions to surface and/or groundwater in the event of a fuel spillage. The proposed development will be operated within acceptable standards for this type of development.

3. ENVIRONMENTAL CONSIDERATIONS

3.1 HUMAN BEINGS

The impact on human's beings forms one of the most important aspects to be considered in an EIS. The principal concern in respect to this proposed development is that human beings should experience no significant unacceptable diminution in an aspect, or aspects of 'quality of life' as a consequence of the construction and operation of the proposed development.

The site of Foxtown quarry and WRF is located in a rural area in the townland of Foxtown, c. 6km southeast of Trim. The site of the WRF occupies the entirety of the quarry and landholding of c. 5.2ha, and is located on lands immediately west of, and with direct access to, an unnamed local road. The unnamed local road lies within c. 2km of either the R158 Trim to Summerhill Regional Road, or the R154 Trim to Dublin Regional Road. southeast.

The WRF comprises the entirety of the quarry site, and the existing applicants land holding, which covers an area of c. 5.2ha, and is shown on EIS *Figure B2.2 - Rev A, EIS Section 2 Figures*. The northern section of the quarry site (i.e., Phase 1) site has been partly restored to agricultural use, and is currently supporting livestock. The southern section designated as Phase 2, and the central section designated Phase 3, which houses all of the site

infrastructure, are yet to be restored and remain in a disturbed and degraded state, typical of active quarry workings.

There are sixteen established individual residences within a 500m radius of the site, as shown on Figures B 2.1 – Rev A and B 2.2 – Rev A, *EIS Section 2 Figures*. There are no dwellings on the site or landholding, although three dwellings are located within 75m to the east of the site, on the east side of the unnamed local road.

Meath benefits from this proximity to Ireland's primary economic hub and National Gateway, and the largest market in the State. Meath also benefits from its strategic location on the Dublin-Belfast international corridor linking both capital cities and international airports. The excellent, multi-modal transport infrastructure which provides ready access to Dublin Airport and Dublin Port also delivers strong connectivity throughout the county with four national primary routes, three of which are motorway (i.e., M1, M3 and M4).

During the recession Meath's unemployment levels rose dramatically from the end of 2007 to 2010, and remained a factor of about 3 times the pre-recession levels at c. 12,000 during 2010 and 2011. The dramatic increase in unemployment has been largely associated with the collapse of the construction industry and the associated service industries. The recent improvement in unemployment figures probably reflects stabilisation in job losses combined with the historical pressure valve of emigration.

Historically, agriculture and businesses supporting agricultural production would have been the main source of employment in the area and nearby villages and towns. Kiltale, Monalvy and Rathmoylan offer few employment opportunities, with the nearest commercial and industrial centre being in Summerhill Enterprise Centre, and Trim, the Enterprise Centre, the Eamon Duggan Industrial Estate, the Fairgreen Industrial Estate, the Oaktree Business Park, and the Scurlockstown Business Park. However, outside of Trim, the major employment opportunities for the workforce resident in the Galtrim ED are probably in Navan and Dublin.

The quarry at Foxtown has provided employment for local people, both directly and indirectly. Kiernan Sand and Gravel Ltd employ two directly.

There are many large residential settlements close to the site, with the graig of Kiltale c. 2.5km to the east and Moynalvy c. 5km to the southeast, the village of Rathmoylan 7km to the southwest, and the towns of Summerhill c. 4.5km to the south, Trim c. 6km to the northwest, Dunshaughlin c. 11.5km to the east, Kilcock c. 14km to the south, Navan c. 18km to the north, Maynooth c. 18km to the south southeast, and Dunboyne c. 18km to the southeast. With exception of the R154 and R158, the roads in the immediate area are of a local character and typical of a rural location. The M3 motorway (at Junction 6) lies c. 10km to the east, whilst the M4 motorway (at Junction 8) and the Dublin-Galway mainline railway run roughly along the Meath-Kildare border, and are only c. 12.5km to the south at Kilcock.

Operations within the quarry site, which includes the WRF, are carried out in accordance with all relevant legislation / regulations and with the best work practices for the industry

Adequate fencing, signage and other barriers have been erected around the quarry site, which will also corresponds to the WRF, for the safety of the general public and to prevent livestock straying into the development. Large lockable gates are in place to guard against unauthorised and unsupervised entry to the site outside of working hours.

The proposed continued operation of the WRF at Foxtown arises from: (1) from the continued demand of human beings to have their buildings, roads and structures, modified and improved, resulting in the generation of large volumes of inert C&D waste, including soil and stone; and (2) the requirement to restore land, previously disturbed and degraded by sand and gravel extraction at the Foxtown quarry, through backfilling with recovered inert soil and stone. The recycling and recovery of C&D waste is essential to reduce resource utilisation and divert reusable inert waste from landfill.

Although Foxtown is a rural location, it is strategically located within a large catchment area with numerous large settlements, such as Kiltale, Summerhill, Rathmoylan, Moynalvy, Trim, Kilmessan, Dunshaughlin, Kilcock, Duboyne, Blanchardstown and Navan, rendering the WRF well positioned to recover large volumes of inert soil and stone. There is also a preference for the deposition of soil and stone to be underpinned by a beneficial use in order to be considered waste recovery. Consequently, co-location of a waste recovery facility at Foxtown quarry has significant positive impacts, and is thus environmentally preferred.

It is expected that the potential negative impacts on human beings and amenity of the area arising from the WRF, above those already arising from the quarry, relate mainly to nuisance from noise, dust and traffic.

The existing quarry development has been undergoing progressive reinstatement to agricultural/woodland using imported material for the past 7 years. The impact of the restoration works to date has had a positive impact on the environment in returning these lands to beneficial use. The quarry has put in place a number of mitigation measures with respect to environmental management and monitoring to ensure that operations do not result in significant impacts on the surroundings, including the human environment.

On completion of site activities, the site of the quarry and WRF will be decommissioned and left safe and secure. Furthermore, the site will be reinstated in accordance with the phased restoration scheme for the quarry, and thus integrated back into the surrounding landscape with the attendant improvement to the amenity of the area.

Kiernan Sand and Gravel Ltd is a family run business that has been supplying building materials in the form of aggregates in County Meath since the early 1960's. The quarry has contributed indirectly to sustaining and developing the local and regional economy through the supply of building products, and has provided employment for local people, both directly and indirectly.

The proposed continuation of the WRF would provide a valuable and necessary resource to the county and wider region, providing a beneficial use for the recovery of inert soil and stone as an alternative to landfill. The WRF already exists and has an established record of meeting its regulatory obligations and current environmental standards.

Traffic entering and leaving the site will use the existing established quarry site access. The quality of the pavement in the vicinity of the Quarry and Waste Recovery Facility entrance to the R154 is at present in good condition.

As the WRF is co-located within the existing quarry, there is negligible additional visual intrusion. There are no Protected Views and Prospects near or oriented towards the site (Meath County Council 2013).

There are no Recorded Monuments within the proposed development area. There are four Recorded Monuments within the 1km study area. There are no Protected Structures, Architectural Conservation Areas, NIAH structures or NIAH historic gardens or designed landscapes within the proposed development area. As a result there will be no direct or indirect construction impact on the archaeological, architectural or cultural heritage resource.

The impact of inert waste disposal on this site will be considerable in local ecological terms but will not result in any loss of heritage values in the locality. In the long-term it will create pasture/woodland and, in habitat terms, simulate a feature of the pre-existing esker.

If the proposed continuation of the WRF did not proceed, the recovery of inert soil and stone at the WRF would not occur, and result in the failure to divert these volumes from disposal in landfill, as required under the Waste Framework Directive 2008. Furthermore, the Foxtown site would be unable to complete the phased restoration of the quarry void and the proper reinstatement of the land. Additionally, the existing WRF would be forced to cease operations resulting in the loss of employment. This would have a significant and direct negative impact on the local human environment.

Any impact on the natural environment will be mitigated against to the greatest degree practical, thereby minimising any associated impact on the "human" environment. Kiernan Sand & Gravel has established an on-going environmental monitoring programme for the Foxtown quarry and WRF site. The programme will allow for on-going monitoring of environmental emissions (e.g., noise, dust, water) from the site, thereby assisting in ensuring compliance with any future requirements or regulations. The results of this monitoring will be made available to the EPA and the Local Authority on a regular basis, where members of the public may examine it. The future monitoring programme will be revised accordingly, subject to compliance with any conditions attached to a decision to grant a Waste Management License.

The development can be controlled and regularised in accordance with the scheme as outlined in this document, through continued environmental monitoring and by conditions imposed by the EPA. The proposal will have no major and/or long-term effect on the human environment.

Once the proposed continued operation of the WRF is authorised with a Waste Management License, and mitigation measures provided for, there are no significant residual impacts envisaged in terms of community and other socio-economic issues.

3.2 FLORA AND FAUNA

The site is a former esker which runs parallel to a minor road in Foxtown. From the north there is a hardcore yard grading southwards into reclaimed pasture and then the open quarry itself, an expanse of spoil and bare ground with some piles of exposed sand, gravel or till and lesser areas of recolonising bare ground. The southern end consists of a wooded slope with trees of willow, birch and alder, most of them planted. Parts of the former esker survive along the roadside and are either dry, calcareous grassland or scrubby oak, ash, hazel woodland. There is no water present, nor nearby watercourse.

Two sections at the northwest end of the site have been reclaimed to ryegrass pasture. One is being grazed by horses, the other recently seeded.

The site supports a high population of rabbits and is visited by foxes but there was no sign of a permanent earth, or of badgers. There is probably some usage by bats at the southern end as the esker continues with better grown trees for some distance. The open parts of the site itself, however, have negligible value for these animals.

Very few birds were seen during the site visit; there were no sand martins, for example, a species which often nests in sand quarries. The birds that were present were the commoner garden birds and these were associated with the trees along the roadside. Blackbird, robin, dunnock, wren, willow warbler, chaffinch and bullfinch occur.

The absence of well-developed vegetation also means that insect species were poorly represented. Small white and tortoiseshell butterflies were the only species seen.

The overall site is relatively barren with a lot of exposed material, both brought in and original. Its flora and fauna are also reduced though there are traces of most dry communities that develop in such sites. There are no species of interest in the fauna.

The quarry site at Foxtown, which includes the application site, is not included in any area with an ecological designation (NHA, cSAC or SPA).

In this case the River Boyne and River Blackwater (Site Code 2299), a river and valley system of European interest, is the only one within 15km of the proposed project.

Screening for Appropriate Assessment was carried out with respect to the licence application and a copy of this report was previously submitted to the EPA. The findings of the screening for Appropriate Assessment were that the activity, individually or in combination with other plans or projects is not likely to have a significant effect on the Natura 2000 network, or the conservation objectives of the sites. A Stage 2 Appropriate Assessment is therefore not required.

The impact of inert waste disposal on this site will be considerable in local terms but will not result in any loss of heritage values in the locality. In the long-term it will create pasture/woodland and, in habitat terms, simulate a feature of the pre-existing esker.

3.3 SOIL & GEOLOGY

The sand and gravel extraction at Foxtown exploits a meandering glacial ridge feature, known as the Trim Esker, which shows evidence of quarrying over much of its c. 14.5km length.

The quarry resource has been extensively worked, and the quarry void is in the process of being backfilled with imported soil and stone, capped with topsoil, as per the phased restoration scheme. Most of the original topsoil has already been utilised together with imported topsoil to restore previous sections of the site.

Observations from site visits and information obtained from the facility operators, indicate that the quarry pit excavations extend to approximately 12m below the ridgeline of the esker, and thus indicate substantial thickness of soil and sand and gravel overlying the bedrock in the quarry site.

The Lucan Formation, also known as the "Calp", which is widespread in County Meath and north County Dublin, and underlies the entire site and surrounding area (i.e., within c. 2.5km).

The site of the quarry and WRF is located on one of County Geological Sites, namely the Trim Esker (Site Code: MH017). A second such site of geological interest occurs c. 1km south of the Foxtown site, namely the Galtrim Moraine (Site Code: MH012), but it has not been recommended as an NHA, because of the scale of the landforms.

The impact of the development on the identified geological heritage of the site was assessed with reference to GSI consultation and to the “Geological Heritage Guidelines for the Extractive Industry” developed by the GSI and the Irish Concrete Federation. These guidelines are intended for Irish Concrete Federation (ICF) members so that they may follow best practice and receive clear information concerning geological heritage in relation to any proposed quarry or related development or land purchase.

The WRF will have no indirect impact on the local or regional geology, as placement of the inert soil and stone will not release contaminants onto the lands, whilst dust from the WRF will be tightly controlled.

Whilst active quarrying on the site has effectively ceased at Foxtown it is proposed that consideration will be given to the “Geological Heritage Guidelines for the Extractive Industry” guidelines during the restoration of the site.

As part of the IGH Programme consultees are requested to assist with developing work on Irish geological heritage by following the guidelines/mitigation measures below;

- Finalise restoration plans in consultation with IGH, ideally having designed the operation of the quarry to consider end use. Plan for maximum geodiversity on closure, if appropriate. In particular, leave rock faces visible as exposure rather than covered with soil, vegetation or rock debris; make rock faces safely available to geologists, and to the public if possible, by creating public pathways and viewing areas with furniture and information panels (IGH can advise on interpretative materials).
- Maintaining access to the geological heritage interest promotes geoconservation in the community. There are more imaginative, and economical, end uses for quarries than the backfilling method that obliterates existing and newly created geodiversity and biodiversity, such as their modification as open-air amphitheaters or rock climbing facilities. Even if converted to light industrial use, the quarry walls can be retained for geodiversity interest.

Ultimately, after final land reclamation of the quarry site, with the land restored to agriculture and/or forestry, there will be negligible residual impact on the geological heritage of the site and surrounding environment. It is planned to minimise, eliminate or decrease long-term ecological and visual impacts on the environment through the implementation of the final restoration scheme.

In preparation of the restoration scheme it is proposed to preserve a representative section of the residual pit face adjoining the eastern boundary of the site. In preparation of this application consultations were held with Dr. Sarah Gately, Head of Geological Heritage & Planning Programme, Geological Survey of Ireland (GSI) and their appointed consultant quaternary consultant, Dr. Robbie Meehan who has first-hand knowledge of the Trim esker and environs.

The GSI has confirmed *“that it is fully satisfied that the proposed retention of a section of the residual pit face will preserve the geological heritage status of the site. In fact, the backfilling of the rest of the pit will enhance the appearance of this (important) feature, as at present, the base of the pit is quite haphazard”*.

“The GSI would also like to request that future access to the residual face be permitted, for the purpose of scientific study by bona fide scientists”.

3.4 WATER

The primary objective of the hydrological and hydrogeological risk assessment is to assess the impact posed to surface water and groundwater in the area by the proposed WRF activities. Where appropriate, mitigation measures are recommended.

In a regional context, the site is situated in the Boycetown River Sub Basin, within the catchment of the Boyne River, in the Eastern River Basin District. The Boycetown River passes c. 1km north of the site, whilst an unnamed tributary stream flows within c. 250m to the north of the site. Thus, Foxtown is located on the southern flank and within the River Water Body (RWB) or Sub Basin of the Boycetown River.

There are 3 wells within the Foxtown site (i.e., GW1 to GW3), and these are used to monitor groundwater water levels, and are sampled for chemical analysis. Foxtown is not serviced by a mains water supply, and water is abstracted in support of ongoing operations at the quarry and WRF, including road sweeping.

The trend of the hydraulic gradient is from the southwest to the northeast in the direction of Boycetown River. The slope of the water table gives the direction of groundwater flow, as groundwater will flow in the direction of maximum change in water table elevation.

The GSI Vulnerability Map indicates that groundwater in the bedrock aquifer beneath the entire application site has been assigned a vulnerability rating of High (H). The proposed continuation of the WRF operations will result in the restoration of the quarry lands to a topographic ridge similar to the pre-existing esker. Backfilling with inert C&D waste, mostly soil and stone, will result in the build-up of relatively impermeable material within the quarry void. The backfill will reinstate protection for the bedrock aquifer, and reduce the actual groundwater vulnerability to possible contamination by limiting infiltration to lower levels. Furthermore, all potential sources of contamination on the site are managed.

There are no groundwater protection schemes in the vicinity of the Foxtown site, the nearest c. 3km northwest of the site at Scurlockstown.

The Lucan Fm. underlying the Foxtown site are classified as locally important and productive bedrock aquifer. The Trim Groundwater Body (GWB), of which the Foxtown site forms part, is assessed as having Good groundwater status in terms of Water Framework Directive (WFD) Status 2007-2009, but also as being ‘at risk of not achieving good status’ in 2015.

As the only material imported onto the WRF site is C&D waste, principally soil and stone, it should not represent a source of possible contamination of surface waters. The nearest watercourse to the application site is the Boycetown River (c. 1km to the northeast), with a smaller tributary stream passing within c. 250m of the eastern boundary of the site. The

natural drainage pattern existing on site means that surface water run-off within the site percolates to ground through the floor of the sand and gravel pit into the underlying limestone bedrock.

On-site activities will not discharge to any mains sewerage system, and it is proposed to continue to use the on-site toilet with septic tank and associated infiltration area discharging to groundwater. There is no discharge of surface water run-off from the site, and therefore it is not considered necessary to monitor surface water in the area.

The sand and gravels of the esker, within which the quarry was developed, are very permeable and allow rainfall to percolate through the subsoil and infiltrate into the underlying limestone bedrock. In addition to this diffuse recharge of the aquifer, fissures observed in the limestone exposed at the base of the quarry floor, suggest that point recharge is also operating within the site.

The sand and gravel deposits have been worked dry with no extraction below the water table. The sand and gravel has in recent times been dry screened only, with no washing of aggregates.

All water requirements for on-site activities, including the wheelwash, are met by abstraction from the on-site wells. There is a toilet with septic tank and associated percolation area.

There will not be a requirement to discharge water from the site as it is proposed that the quarry and WRF will continue to be worked dry. The majority of surface water run-off on-site will be allowed to percolate to the underlying water table, and thus there will be no requirement to discharge the surface water run-off from the site. There are no active settlement lagoons or ponds on site, and therefore there is no need to discharge surplus waters from same. All requirements for water on-site, including the wheelwash, are met by abstraction from the wells on site. Potable water is brought to the site on daily basis for office and canteen use.

The ongoing operation of the WRF has the potential to impact on groundwater in terms of the groundwater quality. Groundwater quality analysis (i.e., GW1) indicates some contamination by agricultural activities nearby. On-going water quality analysis of representative water samples from the monitoring wells would allow the groundwater quality beneath the site to be properly assessed during the course of the quarry restoration phase of the development.

In order to reduce the impact of the ongoing restoration works on groundwater and surface water receptors, the following are details of remedial measures/procedures to be implemented at the site in order to ensure that the source and/or the pathway is removed. In this way, the potential risk for groundwater/surface water contamination at site is minimised.

The most effective means by which to implement the proposed measures is to condition the mitigation measures as part of a granting of license at the site. In general, the most effective mitigations measures for the site are:

- Adequate containment of on-site fuels and oils to prevent any accidental spillages which may migrate to the sand and gravel subsoils and underlying groundwater;
- Dedicated maintenance and refuelling locations;
- Good work practices to provide adequate control measures for accidental spillages;

Foxtown WRF

- Strict control measures to ensure only suitable material is allowed onto the site, i.e., thorough inspection of waste loads entering the site to confirm inert nature prior to deposition on-site;
- Only granular wastes should be deposited into areas of exposed bedrock or immediately above the groundwater table, in order to prevent the influx of suspended solids into groundwater;
- Ensuring that surface run-off is free from contaminating substances and suspended solids.
- The specific mitigation measures could be included in an Environmental Management Plan as part of the conditions for the site waste licence.

Surface water run-off on-site will be allowed to percolate to the underlying water table. Water used in dust suppression will also percolate naturally to ground. There will be no requirement to discharge surface water run-off from the site. The boundary areas of the quarry form narrow ridges with mature hedgerows that act as protective berms. This ensures that any nearby streams and drains are protected from untreated surface water run-off during the backfilling of the restoration area and from WRF stockpiling areas.

High absorbency mats, pig tails and drums are to be added/maintained in the stock-piling area and in WRF/quarry vehicles to clean up any leaks from plant or machinery.

No servicing or maintenance of any plant or machinery takes place within the restoration area or WRF area. All plant and machinery is driven or tracked to the workshop or the hardstanding in front of the workshop for repairs. High absorbency mats will be provided to contain any spills that may occur.

A fuel bowser is proposed to be used to refuel mobile plant on site. High absorbency mats are provided to contain any spills that may occur.

Oil, lubricants and waste oil products are stored under cover. All oil barrels and lubricants will be stored on spill pallets/ spill trays. Spill kits and drip trays will also be maintained on site and the Company will put in place an emergency response procedure for hydrocarbon spills and appropriate training of site staff in its implementation.

All waste oils are collected and removed offsite by an approved licensed waste collection contractor in the area.

All material to be used for the restoration of the quarry should be inspected to ensure only suitable material is deposited. Only granular and high permeability material should be placed in low lying areas, areas of bedrock outcrop, or within the areas where groundwater is ponding.

It is proposed that groundwater monitoring be carried out for the standard set of parameters. This is recommended to ensure that the proposed continuation of the WRF and the restoration of the site is not adversely impacting on the groundwater beneath the site.

There is a septic tank and infiltration area on-site, and it is proposed that the operators will have the septic tank desludged regularly, and the system monitored and repaired as required.

There are no surface water elements to the site. Surface water run-off will be allowed to migrate to the quarry floor where it will percolate to the underlying watertable. There are no active settlement lagoons or ponds, and no surface water discharges from the site.

The ongoing operation of the WRF has the potential to impact on groundwater in terms of the groundwater quality. Groundwater quality (i.e., GW1) indicates some contamination by agricultural activities nearby. On-going water quality analysis of representative water samples from the monitoring wells would allow the groundwater quality beneath the site to be properly assessed during the course of the quarry restoration phase of the development.

3.5 CLIMATE

The quarry development, including a co-located WRF handling only inert soil and stone, is not of sufficient scale to have any direct or indirect impacts on the regional or local climatic conditions.

If the WRF is not licensed to continue operations, then inert soils and stone waste materials may have to be transported further afield with a consequential impact in terms of increased exhaust emissions for transport of materials to more removed WRF facilities and/or landfill sites. It is considered that the proposed continued operation of the WRF will have an imperceptible positive impact with respect to climate due to restoration of the lands to agriculture/woodland.

3.6 AIR QUALITY

The principle concern in respect of potential airborne dust emissions from the proposed development is the effect on residential amenity. Properties within the vicinity of the development are shown on Figures B.2.1 – Rev A and B.2.2 – Rev A, *EIS Section 2 Figures*.

The materials to be recovered are principally “soils and stone” and inert construction and demolition waste. Any dust generated by the operation will comprise inert particulate matter.

Experience of reclamation workings indicates that mechanical activity is the most significant factor in material erosion and dust generation. Dust emanates from the placement of materials, the movement of vehicles on internal roads, loading and processing operations. However the effect of wind is also an important factor in dust generation and problems may arise at reclamation workings when both factors arise simultaneously.

The current air quality in the region is known to be “good” and thus the impact on air quality with respect to the existing quarry/WRF is considered to be negligible.

The site is sufficiently removed from other recovery activities so as there will be no significant cumulative impact with respect to the operation of the proposed WRF within the existing quarry.

The restoration works using imported “soil and stone” are no different from normal quarry restoration operations. As such there is no cumulative impact with respect to the movement and placement of materials during the progressive restoration of the quarry development.

The proposed development will also be operated within acceptable standards for this type of development.

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

- During dry weather the haul roads and stockpiles are sprayed with water to dampen any likely dust blows. A water bowser is maintained on site for this purpose.
- Consideration will be given to location of mobile plant so as to ensure that any principle dust sources cannot adversely affect sensitive off-site locations.
- Static and mobile wet dust suppression systems will be located at strategic points in the process if required.
- Drop heights are kept to a minimum by using short conveyors and maintaining stocks under the head drum load out points.
- A wheel wash facility has been installed on site and all vehicles are required to pass through the wheel wash on exiting the site.
- All internal roadways will be adequately drained, to prevent ponding.
- The operator has purchased a road sweeper and ensures that the site entrance and adjoining public roadway is regularly cleaned. The sweeper is readily available at short notice to sweep up any materials which may accidentally fall onto the public roadway.
- Suitable vegetation is to be provided on restored areas at the earliest opportunity.
- Ongoing dust monitoring to ensure threshold limits are not exceeded.

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

It is considered given the nature of the activity, control and abatement measures and management of the existing quarry that emissions of pollutants to the atmosphere are not likely to degrade the environment (i.e., be injurious to public health, or have a deleterious effect on flora or fauna or damage property, or impair or interfere with amenities or with the environment).

3.7 NOISE

The principle concern in respect of potential noise emissions from the development is the effect on residential amenity. Noise monitoring to date has shown that site activity at the existing facility are within accepted thresholds for this type of development.

Noise monitoring to date has shown that site activity at the existing facility are within accepted thresholds for this type of development.

The restoration works using imported "soil and stone" are no different from normal quarry restoration operations. As such there is no cumulative impact with respect to the movement and placement of materials during the progressive restoration of the quarry development.

Noise resulting from the operations can be kept to acceptable levels by the implementation of good design, effective operation and management and by the adoption of 'best practices'. Reducing noise at source wherever possible is the most effective way of minimising the impact but barriers and screens between noise source and receptor can also be used to very good effect.

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

- The provision of temporary peripheral screen banks to screen site activities from outside views.
- General site activity will be within the existing pit and below the level of the nearest residences.
- The use of designated haul roads to ensure that site traffic is removed from nearest noise sensitive receptors.
- Regular maintenance of all plant and machinery is an integral part of site management and is important in helping to minimise noise impact.
- All plant and equipment will conform to noise emission limits set out in Statutory Instrument No. 320 of 1998 European Communities Construction Plant and Equipment-Permissible Noise Levels (Regulations, 1998) and amendment set out in Statutory Instrument No. 359 of 1996.

The operator has established an environmental monitoring programme to include noise monitoring. It is proposed to continue to carry out noise monitoring at the three locations (N4 to N6) which includes the nearest noise sensitive locations (Refer to Figure F.10 – Rev A, *EIS Section 2 Figures*). It is proposed to carry out noise monitoring on a bi-annual basis.

The results of monitoring to date shows that the development can comply with the noise level threshold as specified and as a consequence the development will have no significant effects regards noise levels in the area. Noise emissions and their management will be addressed in the 'Environmental Management System' (EMS) for the Foxtown site.

This programme will allow on-going monitoring of noise emissions from the site, thereby assisting in ensuring compliance with any future requirements or regulations.

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

3.8 LANDSCAPE

Meath possesses a diverse range of landscapes, including coastline, drumlins in the north, rich pastures, tracts of peatland and raised bog in the southwest, and the central upland area that includes Tara - the ancient capital of Ireland.

The Meath Landscape Character Assessment, which constitutes part of the Meath County Development Plan (CDP) 2013-2019, identifies and describes the landscape character of the entire county. It also evaluates the capacity of different areas to accept change, without

disproportionate effects and proposes a series of policies and recommendations to guide developments in each type of landscape.

The Foxtown area is located in the plain of the Boycetown River within the larger Boyne River Catchment. The site is situated at approximately 70-80m AOD in a predominantly rural area of south County Meath. The surrounding landscape constitutes lowland with minor hills lying off to the east and south. The Trim Esker, on which the quarry is developed, forms a narrow, meandering, topographic ridge running for c. 14.5km in a NW-SE direction.

The workings are effectively screened by a steep bank running along this public road, which constitutes the un-extracted, remnant margin of the esker, and which is covered in dense, mature hedgerow.

The landscape of the Foxtown area is identified as LCA 6: Central Lowlands, which consists flat-lying lowlands, predominantly as rolling pastureland, with thick wooded hedgerows, some conifer plantations, and shelterbelts of ash and larch, separating medium to large fields. Deep roadside drainage ditches and banked hedgerows are common, and create enclosed rural road corridors with limited views. . The land use in the area is classed as dominantly pasture with subordinate non-irrigated arable land.

The unrestored quarry area is dominated by bare, exposed ground with hedgerows and fragments of scrub at the edges of the site. Overburden stripped to access sand and gravel resource has been used for restoration of completed sections of the excavation. The land in the northern section of the site (i.e., Phase 1) has been restored to agricultural use, with minor conifer plantation on the southern end of the site. The quarry site boundaries are largely maintained with well-treed, mature hedgerows and stock fencing, with only partial views offered at entrances and rare breaks in the hedgerows.

The potential viewshed of the WRF site is restricted to partial or restricted views at entrances, principally the southern main entrance. Thus, views of the site are largely screened by the intervening bank and mature hedgerow. The partially open views of the quarry at the two site entrances along the unnamed local road are largely passing views. However, two residences occur across from the main southern entrance, and are open to partial views of the existing quarry. These residences will benefit from the final restoration of the quarry lands to beneficial agriculture/woodland habitat in the medium term.

There are no protected views and prospects near the site, or oriented toward the area of the site. The application site at Foxtown, which corresponds to the quarry site, is not included in any area with an ecological designation (NHA, cSAC or SPA; See NPWS 2014). The nearest designated site to the Foxtown WRF is c. 4km to the northwest at Scurlockstown, and has triple designation as the Boyne River and Blackwater River cSAC and SPA, and Trim Wetlands pNHA.

The proposed continuation of the WRF was the subject of an assessment that involved the investigation of the cultural heritage including the archaeological, structural and historical background of both the application area and the surrounding area (i.e., 1km radius) using a wide range of existing information as well as a field assessment (Refer to EIS Section 3.9).

The landscape of LCA 6 is described as generally in good condition, and is rated as being of high value and of regional importance, whilst the sensitivity of the LCA is rated as being

medium. Thus, the capacity of LCA 6 to absorb most developments was determined to be medium.

The whole area shows evidence of historical and current sand and gravel extraction, particularly associated with the Trim Esker and Galtrim Moraine, although hard rock quarries occur at Rathcore, Cloncowan and Tromman, near Rathmoylan, at Tullykane, Kilmessan, and at Bray Hill. Thus, the site of the quarry and WRF is surrounded by land that is principally, but not exclusively, occupied by agriculture.

As the WRF is co-located within the existing quarry, it is considered that the WRF will not result in any adverse change in land cover, but rather reinstate disturbed and degraded quarry workings to agricultural land.

The proposed continuation of operations of the WRF co-located within the existing quarry at Foxtown will share much of the existing quarry infrastructure and plant. No additional plant, infrastructure or areas of hardstanding will be required.

The potential viewshed of the WRF site principally arises from minor gaps in the mature hedgerows associated with the two entrances to the site. Although when restored the site will attain a slightly domed topographic profile, existing peripheral screening of intervening banks with tall, mature hedgerows and possibly future forest plantings is expected to be effective at screening views, particularly in the absence of elevated ground overlooking the site. The partially open views of the quarry and WRF from the unnamed local road at the two site entrances are largely passing views.

The landscape of the Foxtown area has medium sensitivity, and thus a limited capacity to absorb development, which can have a disproportionate visual impact. This arises from the limited capacity of this landscape of rolling lowlands of pastoral or rural character to physically or visually absorb development. Sensitive development and conservation of the landscape resource is essential to the underpinning of the rural economy and quality of life of the area. However, it is recognised that areas where there is existing development probably have a high potential to absorb new development. Thus, the WRF is more readily absorbed by the pre-existence of, and co-location within the quarry. Phase 1 is currently being reinstated as part of the quarry restoration scheme, and is reinstating a domed topographic profile in the northern section of the quarry site. These restoration works may suffer from slightly higher visibility, but existing perimeter screening with hedgerows is considered very effective. No additional infrastructure, including buildings or hardstanding areas, have or will be constructed as part of the WRF.

Mitigation measures include avoidance, reduction, compensation and remedy of potential impacts. The primary means of mitigation involves an efficient design and layout for the WRF that optimises use of existing infrastructure and plant, discrete placement of imported materials, provision of screening berms, preservation of existing hedgerows and trees, and the full restoration of the WRF and quarry site, once operations at the site cease.

The objective of the restoration scheme is to ensure visual amenity and to restore the excavation to a beneficial after-use. This would be in accordance with the proper planning and sustainable development of the area.

The WRF is located within the existing quarry workings. The quarry is not a skyline feature, occupying a low field of view from distant receptors; with field boundaries and trees forming the background. The views are mostly obscured by intervening topography and hedgerows. Where views are present, the views are very restricted.

The restoration plan involves the progressive backfilling of the quarry void on a phased basis, with natural inert soil and stone sourced externally and imported. Topsoil will be seeded and the area returned to useable improved land for agricultural grassland for livestock grazing and/or forestry.

Phase 1 of the restoration scheme is nearing completion. Phase 1 is effectively screened from outside views by maintenance of the existing perimeter banks and mature hedgerow planting and trees. No mitigation considered necessary with respect to phase 2 restoration due to existing wooded and mature hedgerow. The outer berm along the public road for Phase 3 will be constructed first and subsequently grassed to provide additional screening of the main backfilling operations from the nearest residences.

Removal of the old cement silo and associated infrastructure near the southern quarry entrance would significantly mitigate any limited partial views of the quarry and WRF.

Initially for each phase the void will be backfilled to the level of the adjoining public road. These workings will be screened from outside views by the existing steep natural bank running along the public road. The second stage will involve construction of an esker like feature to the final profile as shown by Figures B.2.4 – Rev A & B.2.5 – Rev A. The outer berm along the public road will be constructed first and subsequently grassed to provide additional screening of the workings from the nearest residences.

The final landform will comprise a ridge running northwest to southeast which will be similar in profile to the original esker ridge that ran through the lands (Refer to Figure B.2.4 – Rev A).

The residences near the southern quarry entrance will benefit from the final restoration of the quarry lands to beneficial agriculture/woodland habitat in the medium term.

Ultimately, on cessation of operations at the quarry and WRF, the infrastructure will be decommissioned and the site will be fully reinstated back to agricultural and or forestry land.

3.9 CULTURAL HERITAGE

There are no Recorded Monuments, Protected Structures, Architectural Conservation Areas, NIAH structures or NIAH historic gardens or designed landscapes within the proposed development area. As a result there will be no direct or indirect construction impact on the archaeological, architectural or cultural heritage resource.

There will be no construction or operational visual impact on the archaeological, architectural or cultural heritage resource. There will be no construction noise impact on the archaeological, architectural or cultural heritage resource. There will be a negligible operational noise impact on the archaeological and architectural resource.

There will be no residual impacts on the archaeological, architectural or cultural heritage resource. There will be no cumulative impacts on the archaeological, architectural or cultural heritage resource.

There will be no direct or indirect construction impact on the archaeological, architectural or cultural heritage resource. As such, no mitigation measures are required.

There will be no construction or operational visual impact on the archaeological, architectural or cultural heritage resource. As such, no mitigation measures are required.

There will be no construction noise impact on the archaeological, architectural or cultural heritage resource. As such, no mitigation measures are required.

There are no mitigation measures available to offset the negligible operational noise impact on the archaeological and architectural resource.

3.10 MATERIAL ASSETS

Meath has significant resources in terms of aggregates, a resource that had come under pressure due to increased demand prior to the collapse of the construction industry in 2008. Since aggregates can only be worked where they occur, it is important to identify the location of these resources with a view to safeguarding them, coupled with the protection of amenities, prevention of pollution and the safeguarding of aquifers and ground water.

The area around Foxtown has a history of sand and gravel working, with extraction from the glacial deposits, such as eskers, moraines and other glaciofluvial outwash. These activities, including the existing quarry, have co-existed with other land uses in the area mainly agriculture. Importantly, Meath County Council have identified the Trim Esker, on which the Foxtown quarry and co-located WRF is sited, and from which sand and gravel is extracted, as a geological heritage site

The quarry at Foxtown has provided employment for local people, both directly and indirectly. Kiernan Sand and Gravel Ltd employ two directly. An additional temporary employee is hired occasionally. The WRF requires one person operating a bull-dozer/back-hoe excavator and one general foreman to monitor and inspect the quality and suitability of imported materials being brought to the site for recovery. It is expected that an additional general operative will be appointed subject to an upturn in the economy and construction activity.

There are few residences in the immediate area, with only 16 within 500m. Residential development predominantly consists of isolated farm dwellings and of owner occupied bungalow/houses along public roads.

With the exception of the R158 Trim to Summerhill Regional Road, and the R154 Trim to Dublin Regional Road, the roads in the area are of a local character and typical of a rural location. The site lies c. 10km west of Junction 6 of the M3 motorway near Dunshaughlin, and c. 14km north of Junction 8 of the M4 motorway near Kilcock.

The site of the WRF coincides with the quarry site which comprises the entirety of the applicants landholding (i.e., c. 5.2ha). Ultimately, the site will be reclaimed in accordance with the approved quarry restoration scheme, and thus undergo a change of land use back to agricultural and/or forestry land. Thus, as the WRF is co-located within the quarry, the proposed continuation of the WRF will result in a change in land use from mineral extraction to agricultural and/or forestry use.

Traffic entering and leaving the site will use the existing established quarry site access. The quality of the pavement in the vicinity of the Quarry and Waste Recovery Facility entrance to the R154 is at present in good condition. The traffic impact of the Quarry and Waste Recovery Facility is at present considerably less than it was at full production prior to 2008. During this period the traffic generated by Quarry and Waste Recovery Facility had little adverse effect on traffic movements on the surrounding road networks. The continued use of the Quarry and Waste Recovery Facility at the predicted level will not increase the traffic over the present level.

The water supply for the quarry and WRF is provided by the existing well on site. Potable water is brought to the site daily. There is a toilet with septic tank and associated percolation area. The houses in the area are also served by bored wells, and are serviced by septic tank systems and proprietary effluent treatment systems.

Power to local residences is provided by overhead lines, which form part of ESB's country-wide, typically low voltage, electricity distribution network.

The proposed continuation of operations of the WRF was the subject of an assessment that involved the investigation of cultural heritage including the archaeological, structural and historical background of the application area and the surrounding area using a wide range of existing information, as well as a field assessment.

The immediate landscape of the Foxtown area is defined by the sinuous topographic ridge of the Trim Esker meandering in a southeasterly direction through the rolling lowlands for kilometres. Sections of the esker are naturally well wooded and have high ecological value.

The application site at Foxtown, which corresponds to the quarry site, is not included in any area with an ecological designation (NHA, cSAC or SPA; See NPWS (2014)). The nearest designated site to the Foxtown WRF is c. 4km to the northwest at Scurlockstown, and has triple designation as the Boyne River and Blackwater River cSAC and SPA, and Trim Wetlands pNHA.

The impact of inert waste disposal on this site will be considerable in local terms but will not result in any loss of heritage values in the locality. In the long-term it will create pasture/woodland and, in habitat terms, simulate a feature of the pre-existing esker.

The Trim Esker, the geological feature upon which the quarry is sited, and from which sand and gravel is extracted, is designated a County Geological Site (i.e., MH017), but has not been afforded the greater protection of a NHA designation (Clarke et al. 2007). The site report stated that extraction companies are currently exploiting parts of the esker, but future quarrying should be prohibited. As the deposit has all but been worked out within the Foxtown quarry, the best outcome for both the quarry site and the County Geological Site is considered to be reinstatement of the land to agriculture and/or forestry use.

In preparation of the restoration scheme it is proposed to preserve a representative section of the residual pit face adjoining the eastern boundary of the site (Refer to Figure B2.4 – Rev A, *EIS Section 2*).

Although of a rural, pastoral character, the locality is not noted particularly for amenities/activities such as fishing, walking, cycling and other outdoor pursuits. There are no

Protected Views and Prospects oriented toward the area, which might be affected by the continued operation of the WRF.

On completion of waste recovery activities at the WRF, the entire site will be reinstated in accordance with the approved quarry restoration scheme. Therefore in the medium term, the site will be assimilated back into the landscape in a planned manner, with the attendant improvement to the visual amenity of the area.

The proposed continued operation of the WRF at Foxtown arises from: (1) from the continued generation of large volumes of inert C&D waste, including soil and stone; and (2) the requirement to restore land, previously disturbed and degraded by sand and gravel extraction at the Foxtown quarry, through backfilling with recovered inert soil and stone. The recycling and recovery of C&D waste, mainly soil and stone, is essential to reduce resource utilisation and divert reusable inert waste from disposal in landfill, as required under the Waste Framework Directive 2008 (2008/98/EC), and the European Communities (Waste Directive) Regulations, 2011 (S.I. 126 of 2011).

There is a preference for the deposition of soil and stone to be underpinned by a beneficial use in order to be considered waste recovery. Consequently, co-location of a waste recovery facility at Foxtown quarry, has significant positive impacts, and is thus environmentally preferred.

It is expected that the potential negative impacts on material assets of the area arising from the WRF will relate primarily to nuisance from noise, dust and traffic. Indirect or cumulative impacts associated with other similar developments within the area are dealt with where necessary under the respective topic in the EIS.

Foxtown Sand & Gravel Ltd. has established an on-going environmental monitoring programme on site. This programme will allow on-going monitoring of environmental emissions (noise, dust, water) from the site, thereby assisting in ensuring compliance with any future requirements or regulations. The results of this monitoring will be made available to the EPA and the Local Authority on a regular basis, where members of the public may examine it. The future monitoring programme will be revised in order to ensure compliance with conditions attached to any decision to grant a Waste Management License.

The development can be controlled and regularised in accordance with the scheme as outlined in this document, through continued environmental monitoring and by planning conditions imposed by the EPA. The development does not have a significant impact on lands, property or amenity within the area and hence there will be no significant effect on material assets.

3.11 TRAFFIC

The access to the Quarry and WRF is from the R154 Regional Route at the village of Kiltale, then 1.8 kms Southwest along a Local road to a T junction and thence continuing northwestwards along a Local road for a distance of 400m and 650m to the first and second access points respectively.

The Quarry and WRF has two entrances located off the south side of a Local Route in the townland of Foxtown, Co. Meath.

This Local Road leads to the R154 Regional road at the village of Kiltale. A branch Local Road leads from this Local Road to the R158 Summerhill to Trim road. The local roads in this area serve dispersed residents and agriculture. The local roads have sufficient capacity to cater for the Quarry and WRF.

As construction activity has reduced since 2008 the present traffic generated by the Quarry and WRF is considerably reduced. The future continued use of the facility as it exists will continue to generate traffic at the same level as present.

The volume of traffic generated by the existing Quarry and WRF will comfortably be absorbed by the local roads. The most significant effect on traffic will be at the R154/Kiltale-Quarry Road junction. This junction is located within a 50 kph speed zone. It is predicted that the existing Quarry and WRF traffic will be 90% northeastwards towards the M3 and 10% towards Trim.

The impact of the Quarry and WRF on the local road network has been assessed for the Operation and Restoration phases of the Quarry and WRF.

In brief the Quarry and WRF generates traffic which will have an impact on the adjacent road network. In addition the continuing use of the development will maintain the current level of traffic movements on the junction. While the traffic specifically associated with the Quarry and WRF business has reduced significantly since 2008 it is proposed that the future annual intake of material will be 80,000 tonnes of inert material including the recovery of 10,000 tonnes of inert construction and demolition.

The Quarry and WRF will continue to import material for infill until the infill area is exhausted and the lands restored to beneficial after-use.

All trucks exiting the site will leave through the existing wheelwash facility.

Traffic direction signs, warning signs, speed limit signs are established throughout the site.

In the event of material being spilled on the public road the quarry operator will ensure that spilled material is removed from the road surface in a safe and timely manner, as soon as they notice or are notified that a spillage has arisen.

Regular sweeping of the access road and site entrance will also be carried out.

No site traffic will be permitted to travel north on the Local road.

Warning signs to alert passing traffic have been provided on the Local road.

It is considered that given the scale of the proposed development and the nature and condition of the road serving the site, and the proposed mitigation measures that the development will not lead to a greater risk to public safety by reason of traffic hazard.

The following are the conclusions of the analysis of the traffic impact of Quarry and WRF:

1. The capacity of the R154 at the Kiltale Junction is between 700 and 1350 pcu's/hr and the existing volume on the R154 falls within this envelop of the available capacity. The Kiltale/Quarry and WRF site has an approximate capacity of 250 pcu's/hr .The proposed peak hours volumes are considerably less than this.
2. The traffic impact of the Quarry and WRF on the surrounding roads and the R154 network is considered minimal, (on average the projected Quarry and WRF traffic is

1% of the total traffic at the peak hour given the present and forecasted level of activity at the Quarry and WRF.

3. The traffic impact of the Quarry and WRF is at present considerably less than it was at full production prior to 2008. During this period the traffic generated by Quarry and WRF had little adverse effect on traffic movements on the surrounding road networks. The continued use of the Quarry and WRF at the predicted level will not increase the traffic over the present level.
4. The level of turning movements at the R154/Quarry and WRF Access junction are of a low volume within the total capacity of the road network and the Quarry and WRF traffic represents 10.5 % average of these low volume movements.
5. The local road at the quarry entrance is an unaligned single carriageway road with verges stretching to the north and south of the Quarry
6. The local road from the Quarry and WRF Access to the Kiltale junction with the R154 is an unaligned single carriageway road with verges. There a footpath on the east side in the vicinity of the R154.
7. The quality of the pavement in the vicinity of the Quarry and WRF entrance to the R154 is at present in good condition.
8. The adjacent road receiving network to Kiltale village is of a medium quality but is capable to cater for the Quarry and WRF generated traffic.

3.12 INTERACTION OF THE FOREGOING

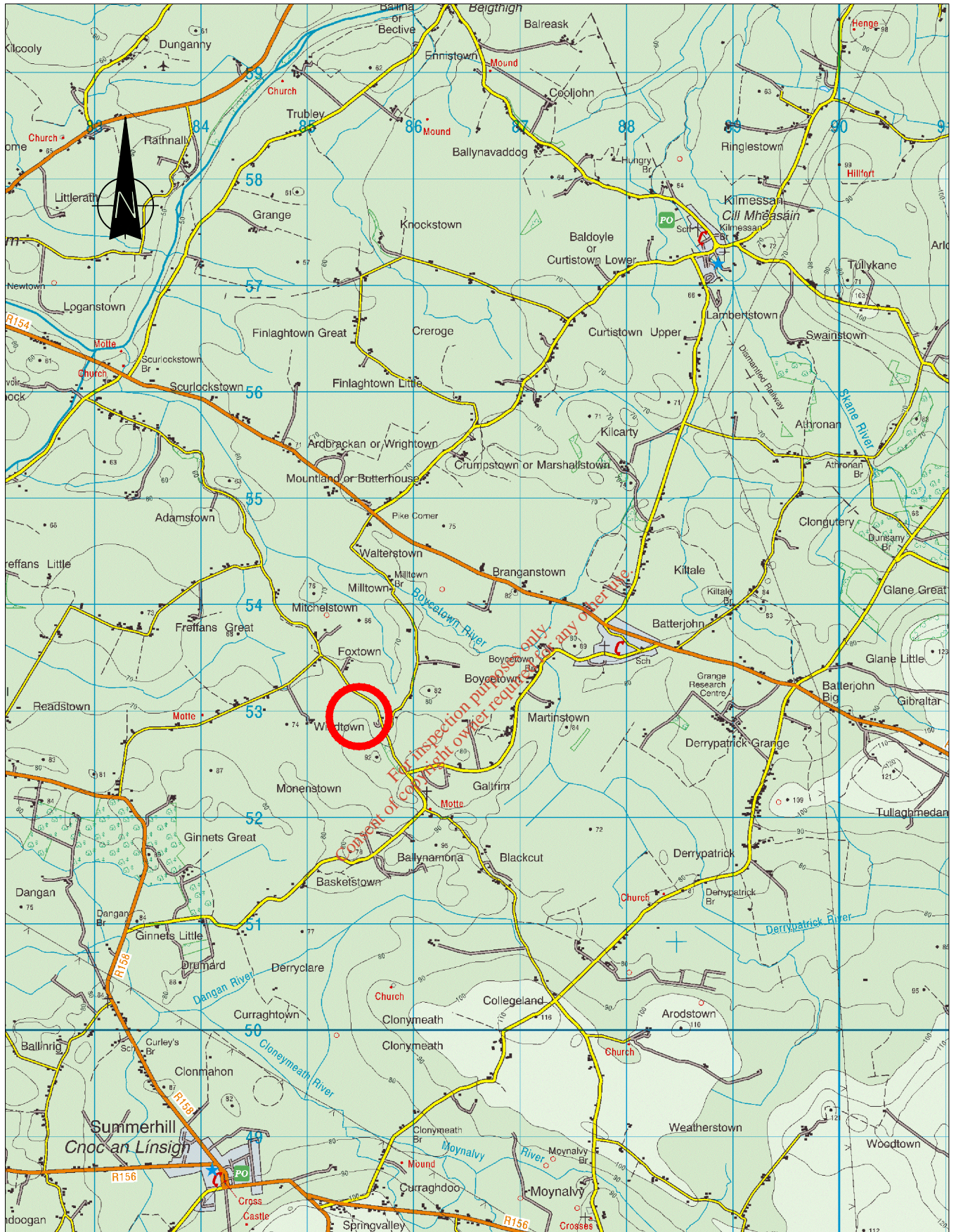
The interactions of the impacts and mitigation measures between one topic and another, where applicable, are discussed under the respective sub-sections within Section 3 of the EIS.

In terms of protecting the environment, the impacts of the proposed development of a Waste Recovery Facility at Foxtown have been assessed and where required, appropriate mitigation measures provided to remedy any significant adverse effects on the environment.

4. FIGURES

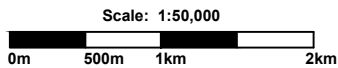
Figure No.	Revision	Title	Scale	Size
A 1.0	-	Site Location Map	50000	A4
B 2.1	A	Site Plan	2000	A3
B 2.2	A	Location Map (500m)	5000	A3
B 2.4	A	Site Restoration Plan	2000	A3
B 2.5	A	Site Cross Sections	2000	A3
D 1.1	A	Site infrastructure	2000	A3
F 1.0	A	Environmental Monitoring Plan	5000	A3

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Extract from 1:50,000 OSI Discovery Series Map No. 42



Legend

Site Location



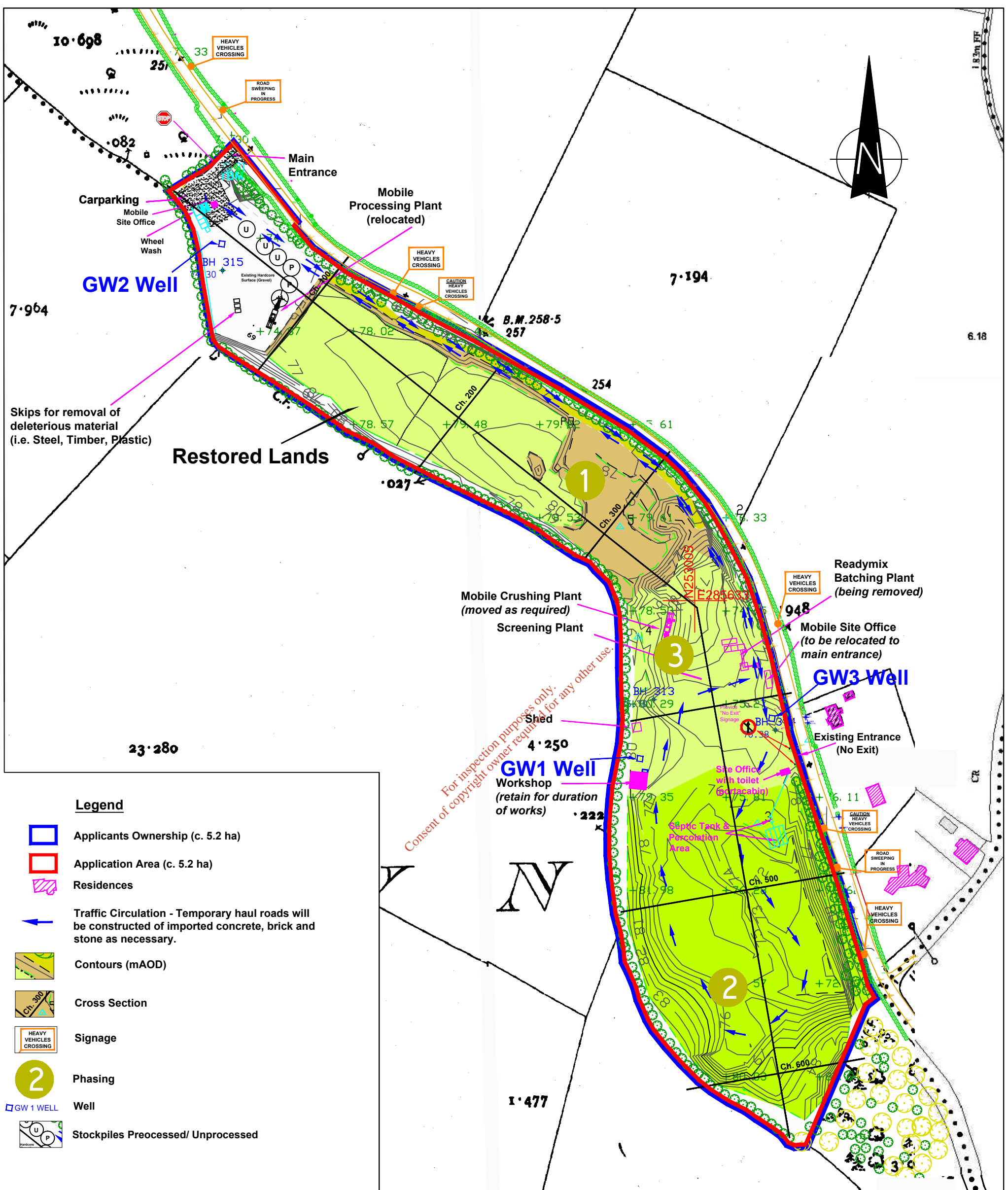
JSPE

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J SHEILS PLANNING & ENVIRONMENTAL LTD

**Site Location Map
Kiernan Sand & Gravel Ltd
Foxtown
Summerhill
Co. Meath**

Author: John Sheils	Job No. JSPE 172
Date: 21/09/14	Ref No. A 1.0



- Legend**
- Applicants Ownership (c. 5.2 ha)
 - Application Area (c. 5.2 ha)
 - Residences
 - Traffic Circulation - Temporary haul roads will be constructed of imported concrete, brick and stone as necessary.
 - Contours (mAOD)
 - Cross Section
 - HEAVY VEHICLES CROSSING Signage
 - 2 Phasing
 - U Well
 - U Stockpiles Preprocessed/ Unprocessed

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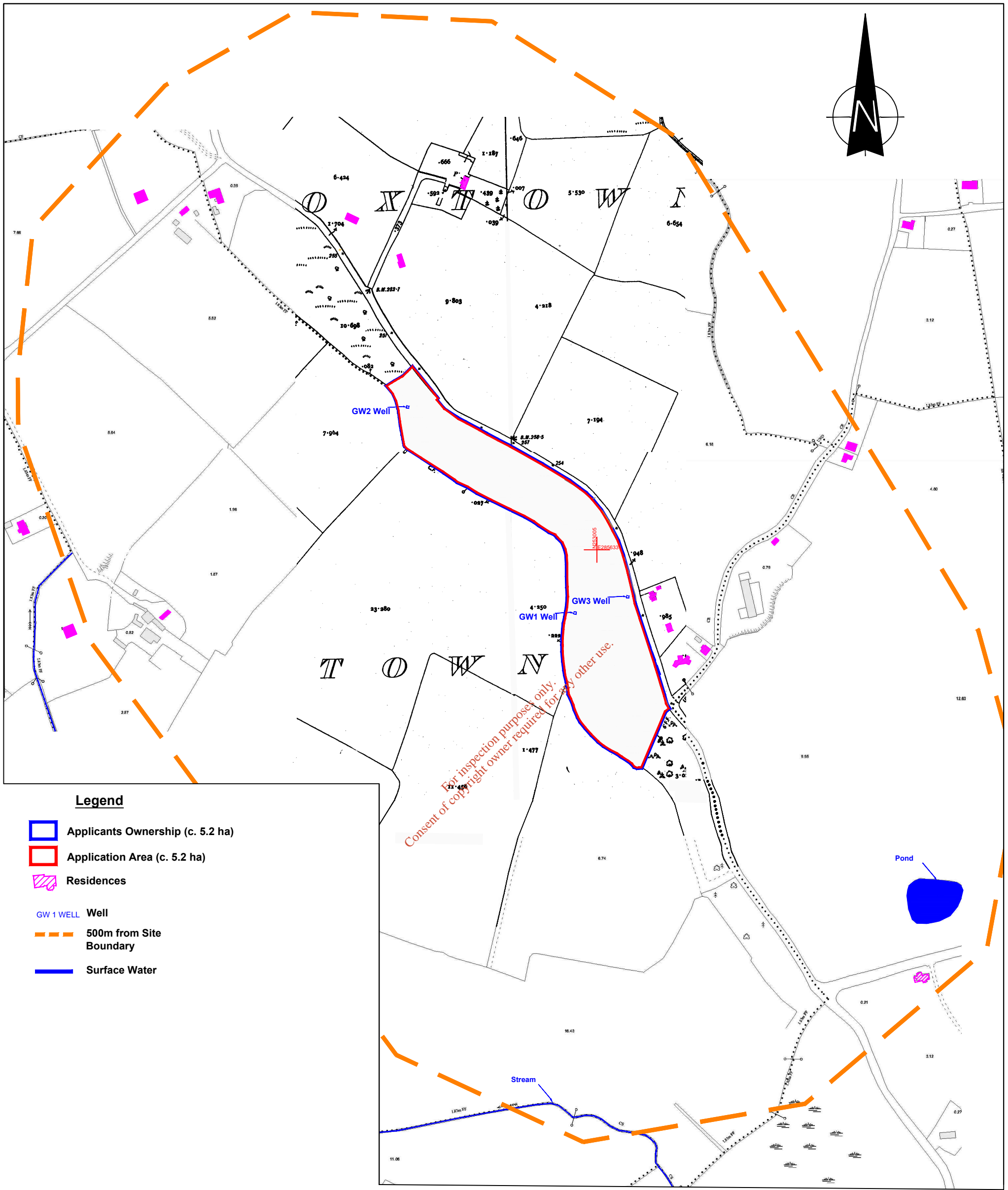


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J SHEILS PLANNING & ENVIRONMENTAL LTD

CLIENT	Kiernan Sand & Gravel Ltd
DRAWING	SITE PLAN
LOCATION	FOXTOWN TOWNLAND Summerhill, Co. Meath.

Drawn by	John Sheils	Scale	1 / 2000
Checked by	John Sheils	Job No.	JSPE 172
Date	20/09/14	Figure No.	B 2.1
		Rev	A



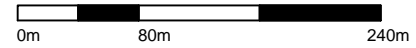
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Legend

- Applicants Ownership (c. 5.2 ha)
- Application Area (c. 5.2 ha)
- Residences
- GW 1 WELL Well
- 500m from Site Boundary
- Surface Water

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Metres

Scale: 1:5000

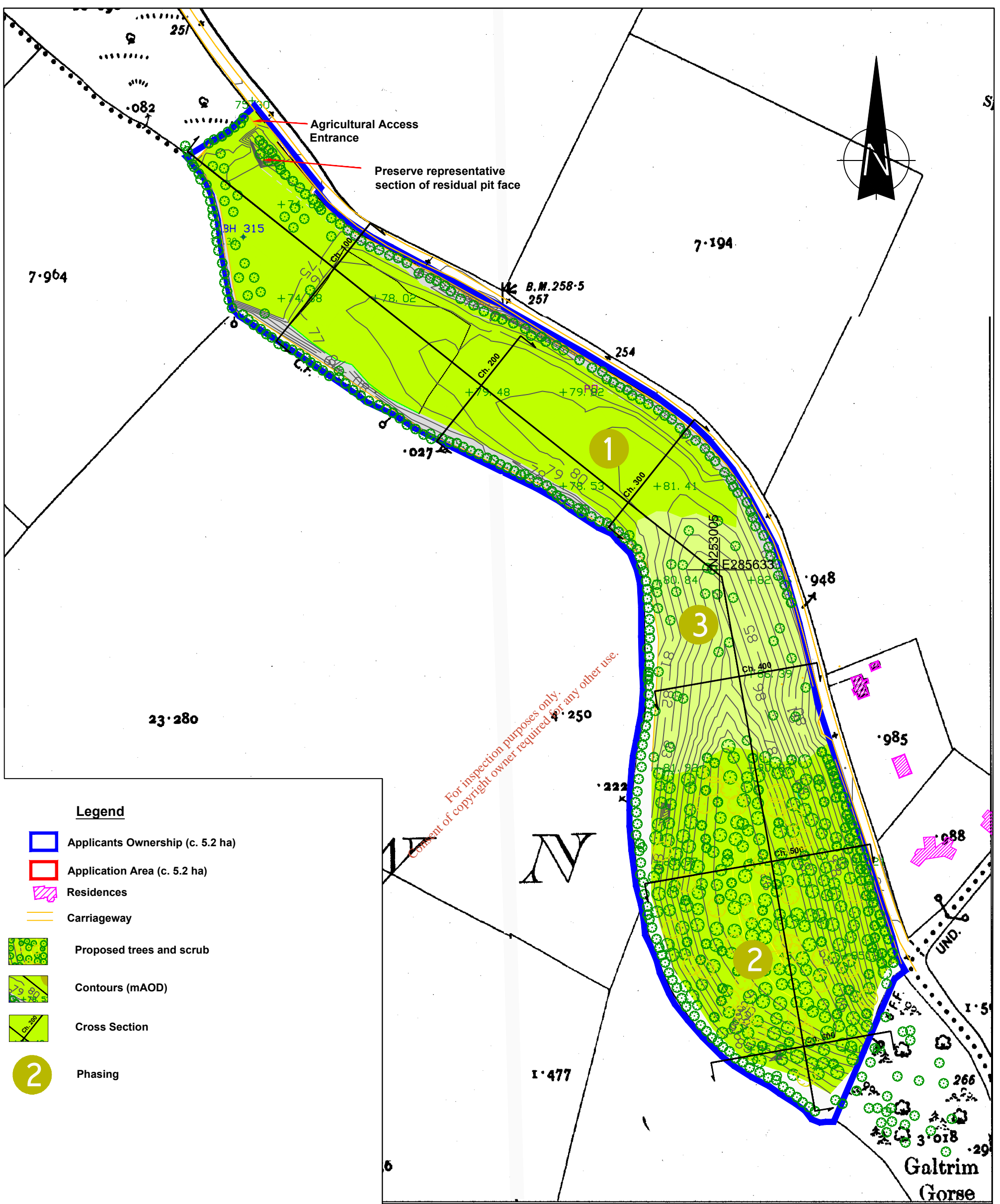


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J SHEILS PLANNING & ENVIRONMENTAL LTD

CLIENT	Kiernan Sand & Gravel Ltd
DRAWING	LOCATION MAP (500m)
LOCATION	FOXTOWN TOWNLAND Summerhill, Co. Meath.

Drawn by John Sheils	Scale 1 / 5000	
Checked by John Sheils	Job No. JSPE 172	
Date 20/09/14	Figure No. B 2.2	Rev A



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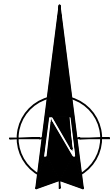


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J SHEILS PLANNING & ENVIRONMENTAL LTD

CLIENT	Kiernan Sand & Gravel Ltd
DRAWING	RESTORATION PLAN
LOCATION	FOXTOWN TOWNLAND Summerhill, Co. Meath.

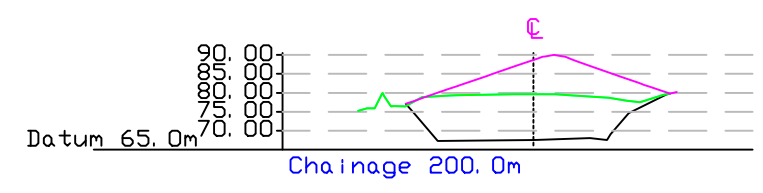
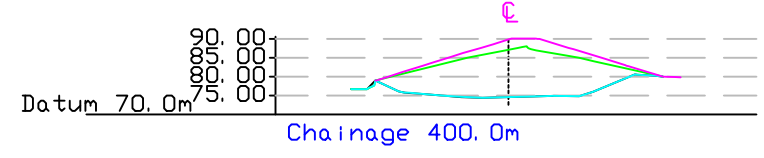
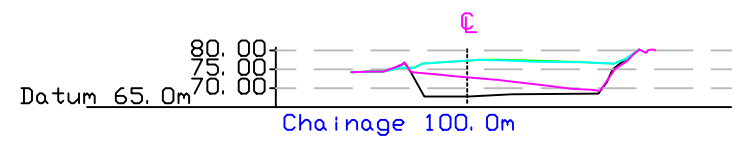
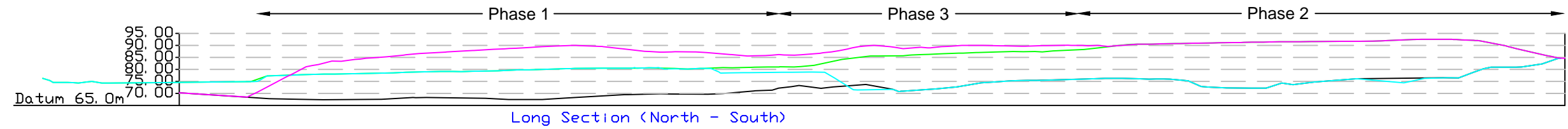
Drawn by John Sheils	Scale 1 / 2000
Checked by John Sheils	Job No. JSPE 172
Date 20/09/14	Figure No. B 2.4
	Rev A



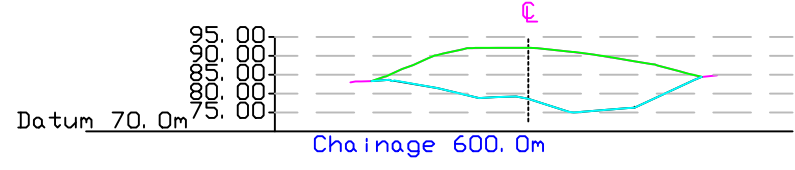
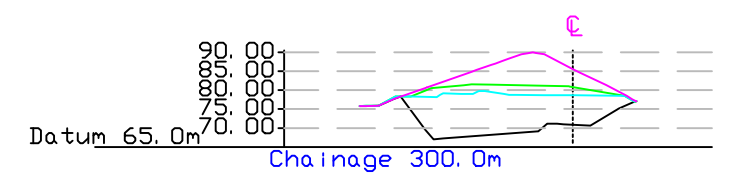
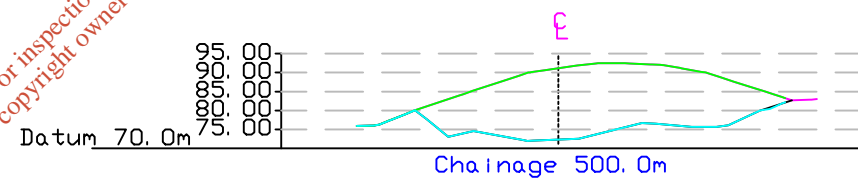
Legend

- Final Landform Profile (mAOD) (Proposed 2009)
- Final Landform Profile (mAOD) (Proposed 2014)
- Existing Ground Profile (mAOD) - 2009
- Existing Ground Profile (mAOD) - 2014

Minimum Fill Depth <1m
 Maximum Fill Depth 20m
 Average Fill Depth 10 to 15m



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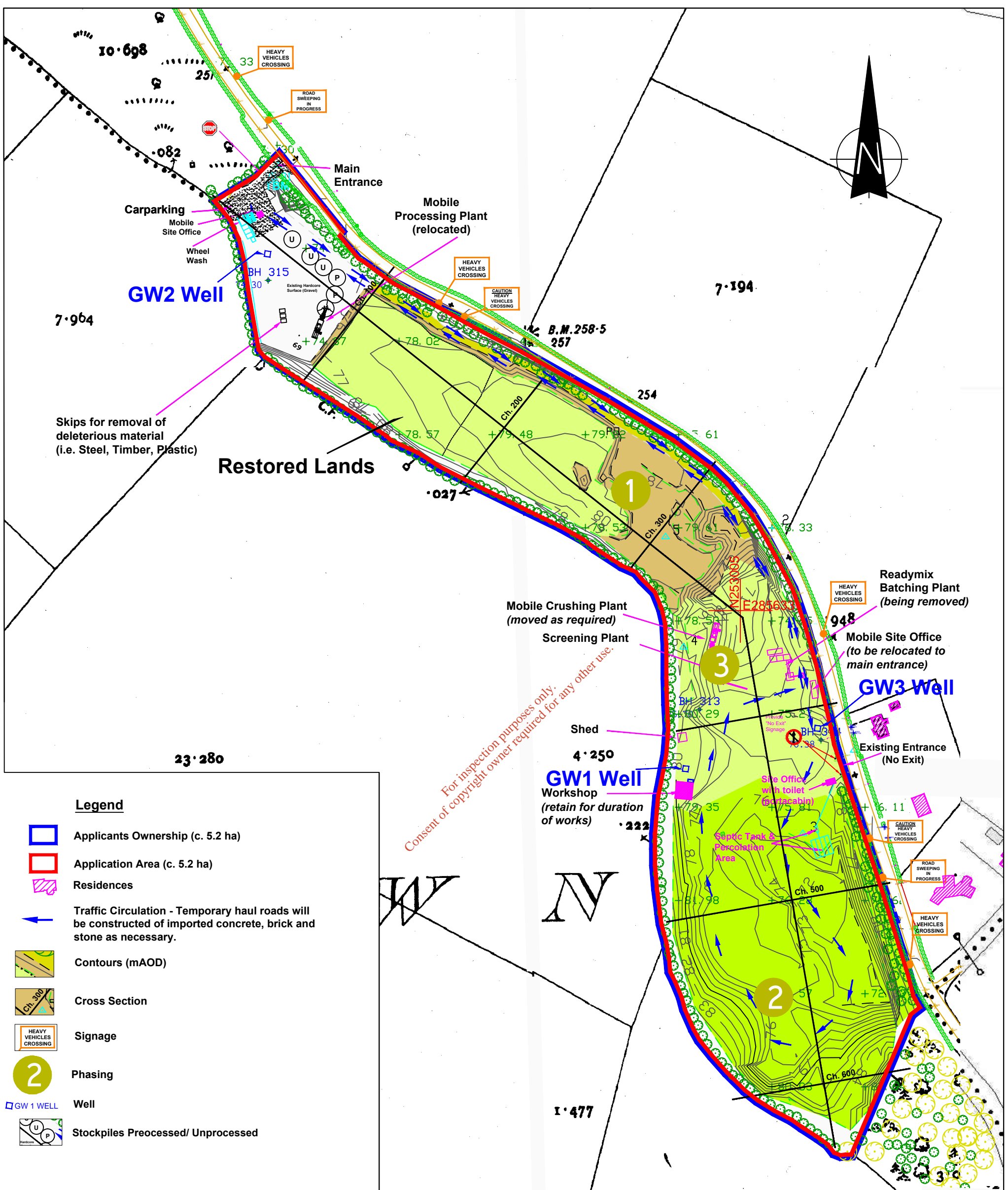
Scale 1:2000

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J SHEILS PLANNING & ENVIRONMENTAL LTD

CLIENT	Kiernan Sand & Gravel Ltd
DRAWING	CROSS SECTIONS
LOCATION	FOXTOWN TOWNLAND Summerhill, Co. Meath.

Drawn by	John Sheils	Scale	1 / 2000
Checked by	John Sheils	Job No.	JSPE 172
Date	20/09/14	Figure No.	B 2.5
		Rev	A



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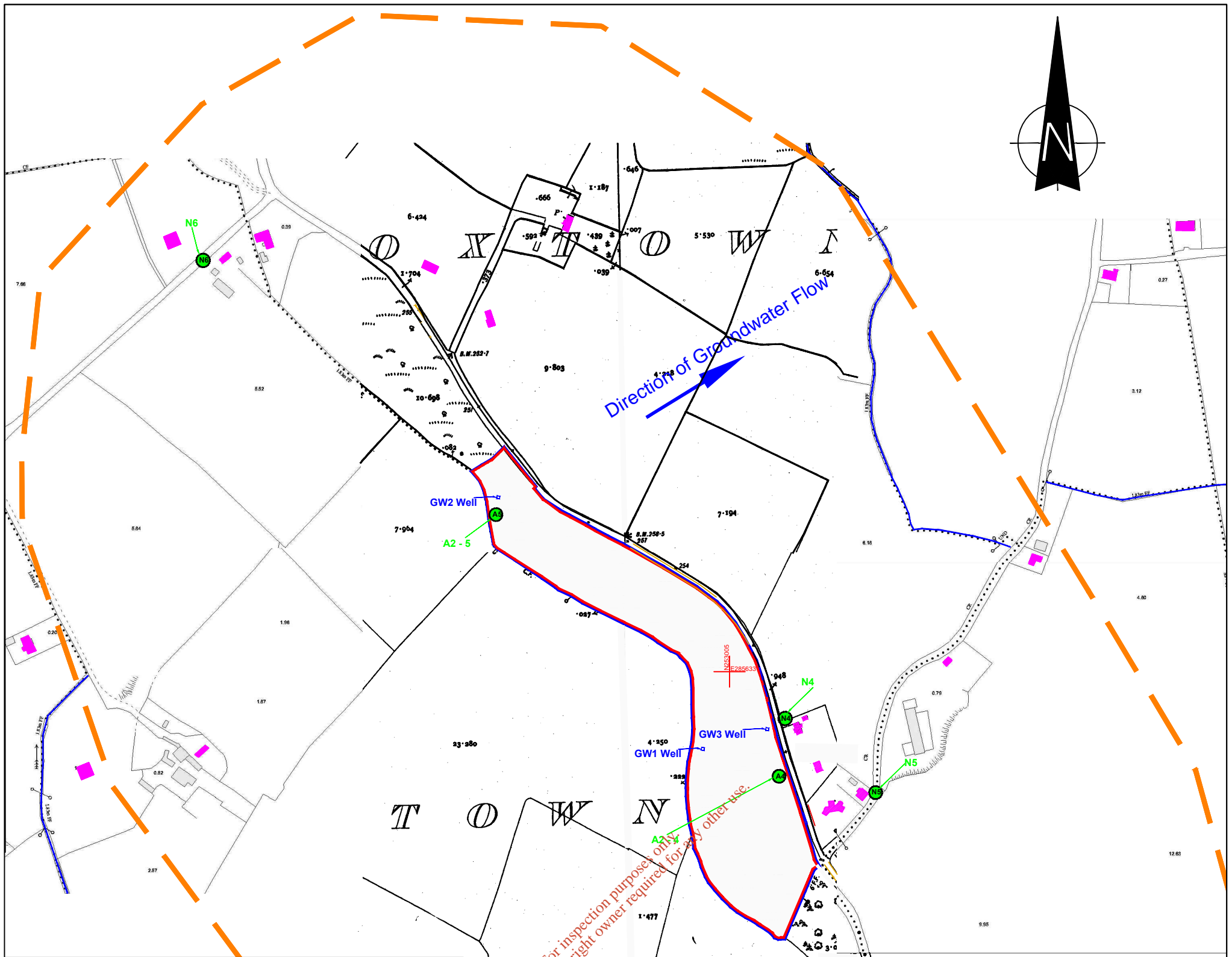


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J SHEILS PLANNING & ENVIRONMENTAL LTD

CLIENT	Kiernan Sand & Gravel Ltd
DRAWING	SITE INFRASTRUCTURE
LOCATION	FOXTOWN TOWNLAND Summerhill, Co. Meath.

Drawn by John Sheils	Scale 1 / 2000	
Checked by John Sheils	Job No. JSPE 172	
Date 20/09/14	Figure No. D 1.1	Rev A



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Legend

- Applicants Ownership (c. 5.2 ha)
- Application Area (c. 5.2 ha)
- Residences
- GW 1 WELL Well
- Environmental Monitoring Location (A2 - Dust N - Noise)
- 500m from Site Boundary
- Surface Water
- SW1 Surface Water monitoring point
- GW1 Ground Water monitoring point
- A2 -4 Dust monitoring point
- N1 Noise monitoring point

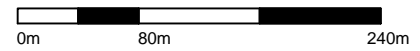
Monitoring Points National Grid Coordinates
 A2-4 = IG Coords E285688, N252890
 A2-5 = IG Coords E285376, N253178

GW1 = IG Coords E285603, N252921
 GW2 = IG Coords E285379, N253198
 GW3 = IG Coords E285674, N252942

N4 = IG Coords E285693, N252954
 N5 = IG Coords E285795, N252873
 N6 = IG Coords E285056, N253457

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J SHEILS PLANNING & ENVIRONMENTAL LTD

CLIENT
Kiernan Sand & Gravel Ltd

DRAWING
ENVIRONMENTAL MONITORING PLAN

LOCATION
**FOXTOWN TOWNLAND
 Summerhill, Co. Meath.**

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Checked by John Sheils	Job No. JSPE 172	
Date 20/09/014	Figure No. F 1	Rev A