Environmental Impact Assessment Report

Volume 3 of 3 – Appendices

For

FURTHER DEVELOPMENT OF UMMERA GRAVEL PIT MACROOM, COUNTY CORK

Prepared for:
Drimoleague Concrete Works Limited
Bredagh Cross
Drimoleague
County Cork

Prepared by:
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
County Cork

September 2020

Environmental Impact Assessment Report

Volume 3 of 3 – Appendices

For

FURTHER DEVELOPMENT OF UMMERA GRAVEL PIT MACROOM, COUNTY CORK

LIST OF APPENDICES

APPENDIX 1-1

CORK COUNTY COUNCIL & ABP DECISIONS

An Bord Pleanála

PLANNING AND DEVELOPMENT ACTS 2000 TO 2013

Cork County

Planning Authority Register Reference Number: CKQY003

An Bord Pleanála Reference Number: 04.QV.0116

LOCATION OF QUARRY: Ummera, Macroom, County Cork.

REVIEW REQUESTED by Drimoleague Concrete Works Limited of Lahadane, Bantry, County Cork in respect of;

(i) **the determination** by Cork County Council, on the 22nd day of August, 2012, under subsection (2)(a)(i) of section 261A of the Planning and Development Act, 2000, as amended by the insertion of section 75 of the Planning and Development (Amendment) Act 2010 and as further amended by the European Union (Environmental Impact Assessment and Habitats) Regulations 2011 and European Union (Environmental Impact Assessment and Habitats) Regulations 2012, which determination was that;

development was carried out after the 1st day of February, 1990, which development would have required, having regard to the Environmental Impact Assessment Directive, an environmental impact assessment, but that such an assessment was not carried out or made, and

(ii) **the decision** by Cork County Council, also on the 22nd day of August, 2012, under subsection (3)(a) that;

permission was granted in respect of the quarry under Part IV of the Local Government (Planning and Development) Act, 1963, and

the requirements in relation to registration under section 261 of the 2000 Act, as amended were fulfilled.

BOARD DECISION

The Board in exercise of its powers, conferred on it under section 261A of the Planning and Development Act, 2000, as amended, and based on the Reasons and Considerations marked (1) set out below, decided to **confirm** the determination of the planning authority in respect of this development made under section 261A(2)(a)(i) of the Planning and Development Act 2000, as amended, and

based on the Reasons and Considerations marked (2) set out below, decided to **confirm** the decision of the planning authority in respect of this development made under section 261A(3)(a) of the Planning and Development Act 2000, as amended

MATTERS CONSIDERED

In making its decision, the Board had regard to those matters to which, by virtue of the Planning and Development Acts and Regulations made thereunder, it was required to have regard. Such matters included any submissions and observations received by it in accordance with statutory provisions.

REASONS AND CONSIDERATIONS (1)

Having regard to:

(a) the provisions of the Planning and Development Acts, 2000 to 2013, and in particular Part XA and section 261A,

(b) the European Communities (Environmental Impact Assessment) Regulations 1989 – 1999, and the Planning and Development Regulations 2001 (as amended), which, in Schedule 5, restate the prescribed classes of development requiring environmental impact assessment, and which in Schedule 7, set out the criteria for determining whether a development would or would not be likely to have significant effects on the environment,

(c) the documentation on the review file (planning authority register reference number CKQY0003) including available aerial photography,

(d) the planning history of the site in particular permissions granted by the planning authority under planning register reference numbers 375/76 and 1365/78,

(e) details of site registration by Cork County Council under section 261 of the Planning and Development Act 2000, as amended, for a quarry of 17 hectares (planning authority register reference QR01, An Bord Pleanála reference number 04.QC2002), and the conditions attached to same,

(f) the overall scale of the quarry and the rate and extent of expansion post 1st day of February, 1990 beyond the permitted boundary,

(g) the absence of any documentation on file to verify the claim that the quarry has the benefit of established pre - 1964 use,

(h) the report of the Inspector,

it is considered that development was carried out after 1st day of February, 1990 which development would have required having regard to the Environmental Impact Assessment Directive, an environmental impact assessment, but that such an assessment was not carried out.

REASONS AND CONSIDERATIONS (2)

The Board considered that

(a) planning permission was granted for this quarry under Part IV of the Local Government (Planning and Development) Act ,1963,

(b) quarrying at this site has extended beyond the boundaries indicated under planning register reference numbers 375/76 and 1365/78,

(c) the requirements in relation to registration under section 261 of the 2000 Act, as amended, were fulfilled in relation to this quarry site.

Member of An Bord Pleanála
duly authorised to authenticate
the seal of the Board.

Dated this day of 2014.

CORK COUNTY COUNCIL

PLANNING AND DEVELOPMENT ACTS 2000-2010, AS AMENDED

NOTICE PURSUANT TO SECTION 261 A (3) OF THE PLANNING & DEVELOPMENT ACT 2000 AS INSERTED BY SECTION 75 OF THE PLANNING AND DEVELOPMENT (AMENDMENT) ACT 2010, AS AMENDED

Our Ref: CKQY0003

Drimoleague Concrete Works Limited,
Glengarriff River,
Bantry,
Co. Cork.

RE: Quarry Development operated by Drimoleague Concrete Works Limited, at Ummera, Macroom. Reference CKQY0003

THE PLANNING AUTHORITY HAS DETERMINED PURSUANT TO SECTION 261A (2) OF THE PLANNING & DEVELOPMENT ACT 2000 AS INSERTED BY SECTION 75 OF THE PLANNING AND DEVELOPMENT (AMENDMENT) ACT 2010, AS AMENDED THAT:

Quarry development was undertaken post 1st February 1990 that would, having regard to the Environmental Impact Assessment Directive, have required an environmental impact assessment but that such an assessment was not carried out or made.

REASONS FOR DETERMINATION:

The quarry development expanded by 3.84 ha approx. post 1995. This expansion is evident on examination of the 1995, 2000 and 2005 aerial photography issued by the ordnance survey and from a site inspection.

This expansion results in the quarry being greater than 5ha in surface area and therefore results in the quarry being of a Class listed in Part 2 of Schedule 5. The extension has resulted in an increase in size greater than 25% of the quarry area and greater than 50% of the appropriate 5ha threshold. Accordingly EIA is required under Class 13 of Part 2, Schedule 5 of the Planning & Development Regulations 2001, as amended.

THE PLANNING AUTHORITY HAS DECIDED PURSUANT TO SECTION 261A SUBSECTION (3) OF THE PLANNING & DEVELOPMENT ACT 2000, AS INSERTED BY SECTION 75 OF THE PLANNING AND DEVELOPMENT (AMENDMENT) ACT 2010, AS AMENDED THAT:

- Planning permission was granted for the quarry.
- The quarry was registered under Section 261 of the Planning Acts.

REASONS FOR DECISION

Permission was granted for the quarry under Pl Reg. 76/375. The quarry has been subject to unauthorised extension that has given rise to the requirement for EIA.

THEREFORE YOU ARE DIRECTED TO APPLY TO AN BORD PLEANALA, 64 MARLBOROUGH STREET, DUBLIN 1, FOR SUBSTITUTE CONSENT IN RESPECT OF THE QUARRY, NOT LATER THAN 12 WEEKS AFTER THE DATE OF THIS NOTICE OR SUCH FURTHER PERIOD AS THE BORD MAY ALLOW. THE APPLICATION FOR SUBSTITUTE CONSENT SHALL BE MADE IN ACCORDANCE WITH SECTION 177E OF THE PLANNING & DEVELOPMENT ACT 2000, AS INSERTED BY SECTION 57 OF THE PLANNING & DEVELOPMENT ACT 2010, AS AMENDED AND THE PLANNING & DEVELOPMENT REGULATIONS 2001-2012

THE APPLICATION FOR SUBSTITUTE CONSENT SHALL BE ACCOMPANIED BY A REMEDIAL ENVIRONMENTAL IMPACT STATEMENT AND UNDERTAKEN IN ACCORDANCE WITH SECTION 177 F OF THE PLANNING & DEVELOPMENT ACT 2000, AS INSERTED BY SECTION 57 OF THE PLANNING & DEVELOPMENT ACT 2010, AS AMENDED.

NOTE: YOU MAY APPLY TO AN BORD PLEANALA, NOT LATER THAN 21 DAYS AFTER THE DATE OF THIS NOTICE, FOR A REVIEW OF THE SUBJECT DETERMINATION OF THE PLANNING AUTHORITY UNDER SECTION 261A SUBSECTION 2.A OR THE SUBJECT DECISION OF THE PLANNING AUTHORITY UNDER SECTION 261A SUBSECTION 3.A AND THAT NO FEE IN RELATION TO EITHER APPLICATION FOR A REVIEW SHALL BE PAYABLE.

Please find attached a copy of Section's 177E and 177G of the Planning & Development Act 2000 as inserted by Section 57 of the Planning & Development Act 2010, as amended.

Mise, le meas,

Noel Cooke
Staff Officer,
Planning.

Date: 23rd August 2012

Planning & Development Act 2000-2010, as amended Section 177 E, and Section 177F:

177 E – Application for Substitute Consent

(1) An application for substitute consent shall be made to the Board

(2) An application to the Board for substitute consent shall –

a) Be made pursuant to a notice given under section 177B or 261A or a decision to grant leave to apply for substitute consent under section 177D
b) State the name of the person making the application.
c) In accordance with the direction of the planning authority under section 177B(2), section 261A(3)(*c*), section 261A(10) or section 261A(12) shall be accompanied by a remedial environmental impact statement or remedial Natura impact statement or both of those statements as the case may be.
d) In accordance with a direction of the Board under section 177D(7), shall be accompanied by a remedial environmental impact statement or remedial Natura impact statement or both of those statements as the case may be.
e) Be accompanied by the fee payable in accordance with section 177M,
f) Comply with any requirements prescribed under section 177N, and
g) Be received by the Board within the period specified in section 177B, 177D or 261A, as appropriate.

(3) An application for substitute consent which does not comply with the requirements of subsection (2) shall be invalid.

(4) The Board may at its own discretion, on request extend the period specified in section 177B, 177D or 261A, for the making of an application for substitute consent, by such further period as it considers appropriate.

(5) As soon as may be after receipt of an application for substitute consent under this section, which is not invalid, the Board shall send a copy of the application and all associated documents, including the remedial environmental impact statement, or the remedial Natura impact statement, or both of those statements, as the case may be to the planning authority for the area in which the development the subject of the application is situated and such documentation shall be placed on the register.

177F – Remedial Environmental Impact Statement

(1) A remedial environmental impact statement shall contain the following:

a) A statement of the significant effects, if any, on the environment, which have occurred or which are occurring or which can reasonably be expected to occur because the development the subject of the application for substitute consent was carried out;

b) Details of –
(i) Any appropriate remedial measures undertaken or proposed to be undertaken by the applicant for substitute consent to remedy any significant adverse effects on the environment;
(ii) The period of time within which any proposed remedial measures shall be carried out by or on behalf of the applicant;

c) Such information as may be prescribed under section 177N

(2) (a) Before an applicant makes an application for substitute consent, he or she may request the Board to give to him or her an opinion in writing prepared by the Board on the information required to be contained in the remedial environmental impact statement or in relation to the development the subject of the application and the Board shall, as soon as may be, comply with that request.

(b) An applicant shall, in connection with a request under paragraph *(a),* forward to the Board sufficient information in relation to the development the subject of the application for substitute consent to enable the Board to comply with that request, and shall forward any additional information requested by the Board.

(c) The provision of an opinion under this subsection shall not prejudice the performance by the Board of any of its functions under this Act or regulations under this Act and cannot be relied upon in the application for substitute consent or in any legal proceedings.

APPENDIX 1-2

CONSULTATION RESPONSES

Manager DAU <Manager.DAU@chg.gov.ie>

Our Ref: G Pre00034/2020 (Please quote in all related correspondence)

A Chara

On behalf of the Department of Culture, Heritage and the Gaeltacht, I acknowledge receipt of your recent consultation.

In the event of observations, you will receive a co-ordinated heritage-related response by email from Development Applications Unit (DAU) on behalf of the Department.

The normal target turnaround for pre-planning and other general consultations is six weeks from date of receipt. In relation to general consultations from public bodies under the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 to 2011, the Department endeavours to meet deadline dates, where requested.

If you have not heard from DAU and wish to receive an update, please telephone the direct line number below or email manager.dau@chg.gov.ie .

Connor Rooney
Executive Officer

—
An Roinn Cultúir, Oidhreachta agus Gaeltachta
Department of Culture, Heritage and the Gaeltacht

Aonad na nIarratas ar Fhorbairt
Development Applications Unit

Bóthar an Bhaile Nua, Loch Garman, Contae Loch Garman, Y35 AP90
Newtown Road, Wexford, County Wexford, Y35 AP90

—

T +353 (0)53 911 7464
manager.dau@chg.gov.ie
www.chg.gov.ie

—

From: Daniel Keohane [mailto:dkck@eircom.net]
Sent: Thursday 13 February 2020 17:06
To: Manager DAU <Manager.DAU@chg.gov.ie>
Subject: FW: Ummera Gravel Pit, Macroom

Dear Sir / Madam
Drimoleague Concrete Works Ltd (DCWL) has appointed Keohane Geological & Environmental Consultancy to prepare the remedial Environment Impact Assessment Report (rEIAR) for the Ummera Gravel Pit near Macroom County Cork, as well as the EIAR for the continuation of gravel extraction at the site.

The lands at Ummera have been used for gravel extraction since the 1940's. DCWL (through its sister company, Murnane & O'Shea Ltd) became involved in the gravel pit in the mid 1970's and has continuously operated a relatively small-scale gravel extraction and washing operations since then. The gravel pit is in a rural setting in the catchment of the Sullane River. A determination was made by Cork County Council that extraction was undertaken after 01 February 1990 that would have required EIA, but such assessment was not carried out. DCWL has been instructed to apply for substitute consent which should include a rEIAR.

As part of the rEIA, we wish to receive the views and comments from the NPWS-DAU on the Ummera Gravel pit. I attach the site location map for the gravel pit.

If you require further detail, please contact me.

Yours sincerely
Dan Keohane

Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
County Cork

086-8289167

Dept of Transport Tourism and Sport <info@dttas.gov.ie>

THIS IS AN AUTOMATIC ACKNOWLEDGEMENT OF RECEIPT OF YOUR EMAIL. PLEASE *DO NOT REPLY TO THIS EMAIL AS REPLIES TO AUTO ACKNOWLEDGEMENTS WILL* REMAIN UNANSWERED.

Dear Customer,

Thank you for contacting The Department of Transport, Tourism and Sport Customer Services Unit.

We have received your message and the division or staff member that is dealing with your query will provide a full reply within 12 working days in the majority of cases.

In the meantime if you need an answer sooner, you can find answers to most queries on our website, www.dttas.gov.ie

Regards,

Customer Services
Department of Transport, Tourism and Sport

Is seo uath-admháil go bhfuarthas do ríomhphoist. Ná freagraíonn leis an roimhphoist seo más é do thoil é mar fanfaidh freagraí leis na uath-admhálacha gan freagairt.

Chustaiméir, a chara,

Go raibh maith agat as teagmháil a dhéanamh leis an t-aonad um Sheirbhísí do Chustaiméirí sa Roinn Iompair, Turasóireachta agus Spóirt .

Tá do theachtaireacht faighte againn agus beidh an rannán nó don bhall foirne a bheidh ag déileáil le do cheist ag cur freagra iomlán ar fáil laistigh de 12 lá oibre i bhformhór na gcásanna.

Idir an dá linn más gá duit freagra a fháil níos túisce, is féidir leat freagraí den chuid is mó de na ceisteanna a fháil ar ár suíomh gréasáin, www.dttas.gov.ie

Le meas,
Seirbhísí Custaiméirí
An Roinn Iompair, Turasóireachta agus Spóirt

****
Tá eolas sa teachtaireacht leictreonach seo a d'fhéadfadh bheith príobháideach nó faoi rún agus b'fhéidir go mbeadh ábhar rúnda nó pribhléideach ann. Is le h-aghaidh an duine/na ndaoine nó le h-aghaidh an aonáin atá ainmnithe thuas agus le haghaidh an duine/na ndaoine sin amháin atá an t-eolas. Tá cosc ar rochtain don teachtaireacht leictreonach seo do aon duine eile. Murab ionann tusa agus an té a bhfuil an teachtaireacht ceaptha dó bíodh a fhios agat nach gceadaítear nochtadh, cóipeáil, scaipeadh nó úsáid an eolais agus/nó an chomhaid seo agus b'fhéidir d'fhéadfadh bheith mídhleathach.

Tá ár Ráiteas Príobháideachta le fáil ar www.dttas.gov.ie

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Our Privacy Statement is available on www.dttas.gov.ie

Wexford Receptionist <REC_WEX@epa.ie>
A Chara,

Your correspondence on March 16th has been forwarded for attention.

Kind regards,
Ruth O'Connor
Duty Receptionist/Programme Officer
Environmental Protection Agency
P.O. Box 3000
Johnstown Castle Estate
Wexford
Y35 W821

Bosca Poist 3000, Eastát Chaisleán Bhaile Sheáin, Contae Loch Garman.

Tel: 00353 53 91 60600: Fax: 00353 53 91 60699: Email: info@epa.ie web:www.epa.ie
Lo Call: 1890 33 55 99

Environmental Protection Agency on Twitter:
http://twitter.com/EPAIreland.
EPA Climate Change on Twitter:
http://twitter.com/EPAClimateNews
EPA Research on Twitter:
http://twitter.com/EPAResearchNews
YouTube:
http://www.youtube.com/user/epaireland

From: Dan Keohane <dankeohaneivyclash@hotmail.com>
Sent: 16 March 2020 10:22
To: Wexford Receptionist <REC_WEX@epa.ie>
Subject: Ummera Gravel Pit, Macroom

Dear Sir / Madam
Drimoleague Concrete Works Ltd (DCWL) has appointed Keohane Geological & Environmental Consultancy to prepare the remedial Environment Impact Assessment Report (rEIAR) for the Ummera Gravel Pit near Macroom County Cork, as well as the EIAR for the continuation of gravel extraction at the site.

The lands at Ummera have been used for gravel extraction since the 1940's. DCWL (through its sister company, Murnane & O'Shea Ltd) became involved in the gravel pit in the mid 1970's and has continuously operated a relatively small-scale gravel extraction and washing operations since then. The gravel pit is in a rural setting in the catchment of the Sullane River. The Clashavoon Stream flows past the gravel pit, separated by the public road. A determination was made by Cork County Council that extraction was undertaken after 01 February 1990 that would have required EIA, but such assessment was not carried out. DCWL has been instructed to apply for substitute consent which should include a rEIAR.

As part of the rEIA, we wish to receive the views and comments from the EPA on the Ummera Gravel pit. I attach the site location map for the gravel pit.

If you require further detail, please contact me.

Yours sincerely
Dan Keohane

Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
County Cork

086-8289167

Roinn Cumarsáide, Gníomhaithe ar son na hAeráide & Comhshaoil
Department of Communications, Climate Action & Environment

Geological Survey
Suirbhéireacht Gheolaíochta
Ireland | Éireann

Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
County Cork

08 November 2019

Re: Preparation of remedial EIA report for Ummera Gravel Pit near Macroom, Co. Cork

Your Ref:
Our Ref: 19/240

Dan, a chara,

With reference to your email received on 15 October 2019, concerning the preparation of the remedial EIA report for Ummera Gravel Pit near Macroom, Co. Cork, Geological Survey Ireland (a division of Department of Communications, Climate Action and Environment) would like to make the following comments:

Geological Survey Ireland is the national earth science agency and has datasets on Bedrock Geology, Quaternary Geology, Geological Heritage Sites, Mineral deposits, Groundwater Resources and the Irish Seabed. These comprise maps, reports and extensive databases that include mineral occurrences, bedrock/mineral exploration groundwater/site investigation boreholes, karst features, wells and springs. Please see our website for data availability and we recommend using these various data sets, when undergoing the planning and scoping processes. Geological Survey Ireland should be referenced to as such and should any data or geological maps be used, they should be attributed correctly to Geological Survey Ireland.

Geoheritage

Geological Survey Ireland (GSI) is in partnership with the National Parks and Wildlife Service (NPWS, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs) to identify and select important geological and geomorphological sites throughout the country for designation as geological NHAs (Natural Heritage Areas). This is addressed by the Irish Geoheritage Programme (IGH) of GSI, under 16 different geological themes, in which the minimum number of scientifically significant sites that best represent the theme are rigorously selected by a panel of theme experts.

County Geological Sites (CGS), as adopted under the National Heritage Plan are now included in County Development Plans and in the GIS of planning departments, to ensure the recognition and appropriate protection of geological heritage within the planning system. CGSs can be viewed online under the Geological Heritage tab on the online Map Viewer. Though the audit for Co. Cork has not yet been published, **our records show that there are no current CGSs located within the vicinity of Ummera Gravel Pit.** Please note, when the County Audit for County Cork is completed in the future, new CGSs may be identified and included in our datasets.

Therefore, with the current plans, there are no envisaged impacts on the integrity of CGSs. However, if the proposed development plan is altered, please contact myself or my colleague, Clare Glanville at Clare.Glanville@dccae.ie, for further information and possible mitigation measures if applicable.

Groundwater

Groundwater is important as a source of drinking water, and it supports river flows, lake levels and ecosystems. It contains natural substances dissolved from the soils and rocks that it flows through, and can also be contaminated by human actions on the land surface. As a clean, but vulnerable, resource, groundwater needs to be understood, managed and protected. Through our Groundwater Programme, Geological Survey Ireland provides advice and maps to members of the public, consultancies and public bodies about groundwater quality, quantity, distribution and vulnerability. Geological Survey Ireland monitors groundwater nationwide by characterising aquifers, investigating karst landscapes and landforms and by helping to protect public and group

scheme water supplies. With regard to Flood Risk Management, there is a need to identify areas for integrated constructed wetlands. We recommend using the GSI's National Aquifer and Recharge maps on our Map viewer to this end.

Geohazards

Geohazards can cause widespread damage to landscapes, wildlife, human property and human life. In Ireland, landslides are the most prevalent of these hazards. Geological Survey Ireland has information available on past landslides, for viewing on our website and as a layer on our Map Viewer. Geological Survey Ireland also engages in national projects such as Landslide Susceptibility Mapping and GWFlood Groundwater Flooding, and in international projects, such as the Tsunami Warning System, coordinated by the Intergovernmental Oceanographic Commission of UNESCO. We recommend that geohazards be taken into consideration, especially when developing areas where these risks are prevalent, and we encourage the use of our data when doing so.

Geothermal Energy

Geothermal energy harnesses the heat beneath the surface of the Earth for heating applications and electricity generation, and has proven to be secure, environmentally sustainable and cost effective over long time periods. Geothermal applications can range in depth from a few metres below the surface to several kilometres. Ireland has widespread shallow geothermal resources for small and medium-scale heating applications, which can be explored online through Geological Survey Ireland's Geothermal Suitability maps for both domestic and commercial use. We recommend use of our Geothermal Suitability maps to determine the most suitable type of ground source heat collector for use with heat pump technologies. Ireland also has recognised potential for deep geothermal resources. Geological Survey Ireland currently supports and funds research into this national energy resource.

Natural Resources (Minerals/Aggregates)

Geological Survey Ireland is of the view that the sustainable development of our natural resources should be an integral part of all development plans from a national to regional to local level to ensure that the materials required for our society are available when required. Geological Survey Ireland highlights the consideration of mineral resources and potential resources as a material asset which should be explicitly recognised within the environmental assessment process. Geological Survey Ireland provides data, maps, interpretations and advice on matters related to minerals, their use and their development in our Minerals section of the website. The Active Quarries, Mineral Localities and the Aggregate Potential maps are available on our Map Viewer.

I hope that these comments are of assistance, and if we can be of any further help, please do not hesitate to contact me, or my colleague Clare Glanville (Clare.Glanville@dccae.ie).

Le meas,

Amrine Dubois Gafar

Amrine Dubois Gafar
Geoheritage Programme

Michael McPartland <Michael.McPartland@fisheriesireland.ie>
Dan

Thank you for your email

From a fisheries perspective the application should consider, detail and analyse the mechanisms for and impacts of all discharges and abstractions associated with the proposed developments.

Regards

Michael McPartland
Inland Fisheries Ireland
Macroom
026-41221

From: Dan Keohane [mailto:dankeohaneivyclash@hotmail.com]
Sent: 16 March 2020 09:17
To: Macroom Info
Subject: Ummera Gravel Pit, Macroom

Dear Sir / Madam
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As part of the rEIA, we wish to receive the views and comments from Inland Fisheries Ireland on the Ummera Gravel pit. I attach the site location map for the gravel pit.

If you require further detail, please contact me.

Yours sincerely
Dan Keohane

Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
County Cork

086-8289167

Bonneagar Iompair Éireann
Transport Infrastructure Ireland

Mr. Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Dáta | Date	Ár dTag | Our Ref.	Bhur dTag | Your Ref.
9 March 2020	**TII20-108913**	

Re: rEIAR & EIAR Scoping Request: Ummera Gravel Pit, near Macroom, Co. Cork on behalf of Drimoleague Concrete Works Ltd (DCWL).

Dear Mr. Keohane,

Transport Infrastructure Ireland (TII) acknowledges receipt of your remedial EIAR and EIAR Scoping consultation in respect of the above project, received by email 13 February 2020.

National Strategic Outcome 2 of the National Planning Framework includes the objective to maintain the strategic capacity and safety of the national roads network. It is also an investment priority of the National Development Plan, 2018 – 2027, to ensure that the extensive transport networks which have been greatly enhanced over the last two decades, are maintained to a high level to ensure quality levels of service, accessibility and connectivity to transport users.

The issuing of this correspondence is provided as best practice guidance only and does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid application referred.

The approach to be adopted by TII in making such submissions or comments will seek to uphold official policy and guidance as outlined in the Spatial Planning and National Roads Guidelines for Planning Authorities (2012). Regard should also be had to other relevant guidance available at www.TII.ie.

With respect to applications and rEIAR and EIAR Scoping issues, the recommendations indicated below provide only general guidance for the preparation of EIAR, which may affect the national road network. The developer should have regard, *inter alia*, to the following;

1. As set down in the Spatial Planning and National Roads Guidelines (2012), the primary purpose of the national road network is to provide strategic transport links between the main centres of population and employment, including key international gateways such as the main ports and airports, and to provide access between all regions. The EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network in order to demonstrate that the development can proceed complementary to safeguarding the capacity, safety and operational efficiency of that network.

Próiseálann BIÉ sonraí pearsanta a sholáthraítear dó i gcomhréir lena Fhógra ar Chosaint Sonraí atá ar fáil ag www.tii.ie.
TII processes personal data in accordance with its Data Protection Notice available at www.tii.ie.

Bonneagar Iompair Éireann
Ionad Gnó Gheata na Páirce
Sráid Gheata na Páirce
Baile Átha Cliath 8
Éire, D08 DK10

Transport Infrastructure Ireland
Parkgate Business Centre
Parkgate Street
Dublin 8
Ireland, D08 DK10

info@tii.ie
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+353 (0)1 646 3600
+353 (0)1 646 3601

2. Consultations should be had with the relevant local authority/National Roads Design Office with regard to locations of existing and future national road schemes. In particular, attention is drawn to the N22 Ballincollig Bypass to Macroom that appears located to the south west of the site indicated in the submitted site location plan.

3. Clearly identify haul routes proposed and fully assess the network to be traversed. Separate structure approvals/permits and other licences may be required in connection with the proposed haul route and all structures on the haul route should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal load proposed.

4. Where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment (TTA) be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. TII's TTA Guidelines (2014) should be referred to in relation to proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of the TII TTA Guidelines which addresses requirements for sub-threshold TTA.

5. TII Standards should be consulted to determine the requirement for Road Safety Audit (RSA) and Road Safety Impact Assessment (RSIA).

6. Assessments and design and construction and maintenance standards and guidance are available at TII Publications that replaced the NRA Design Manual for Roads and Bridges (DMRB) and the NRA Manual of Contract Documents for Road Works (MCDRW).

7. The developer, in conducting Environmental Impact Assessment, should have regard to TII Environment Guidelines that deal with assessment and mitigation measures for varied environmental factors and occurrences. In particular;
    a. TII's Environmental Assessment and Construction Guidelines, including the *Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes* (National Roads Authority, 2006),
    b. The EIAR should consider the Environmental Noise Regulations 2006 (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see *Guidelines for the Treatment of Noise and Vibration in National Road Schemes* (1st Rev., National Roads Authority, 2004)).

Notwithstanding, any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practice.

I hope that the above comments are of use in your EIAR preparation.

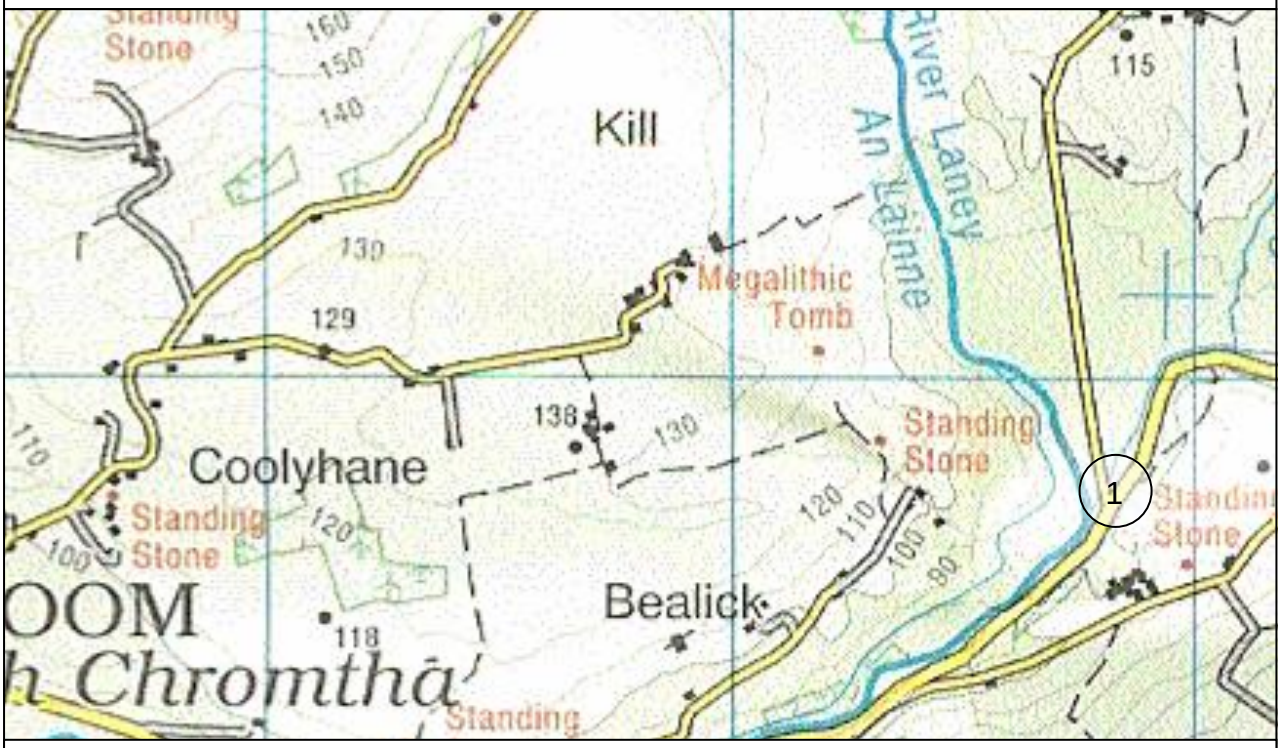
Yours sincerely,

pp **Michael McCormack**
Senior Land Use Planner

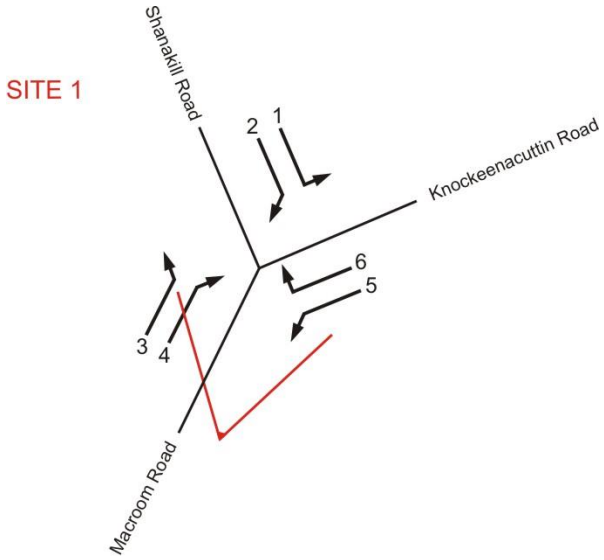
APPENDIX 4-1

2007 TRAFFIC COUNT DATA

Site Location



Movement Numbers & Directions



Job number: ATH/07/014	Job date: 16th January 2007	Drawing No: ATH/07/014-1	abacus Transportation Surveys
Client: Keohane Geological & Environmental Consultancy	Job day: Tuesday	Author: BCK	

ABACUS TRANSPORTATION SURVEYS

MACROOM TRAFFIC COUNT **JANUARY 2007**
MANUAL CLASSIFIED JUNCTION COUNT **ATH/07/014**

SITE: 01 DATE: 16th January 2007
LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

	MOVEMENT 1						MOVEMENT 2						MOVEMENT 3					
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT
07:00	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
07:15	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	1	1
08:00	0	0	0	0	0	0	2	0	0	0	0	2	3	0	0	0	0	3
08:15	0	0	0	0	0	0	1	1	0	0	0	2	1	0	0	0	0	1
08:30	0	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0
08:45	0	0	0	0	0	0	1	1	1	0	0	3	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	5	2	2	0	0	9	4	0	0	0	0	4
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
09:30	0	0	0	0	0	0	1	0	0	1	0	2	1	0	1	0	0	2
09:45	0	0	0	0	0	0	2	0	0	0	0	2	0	1	0	0	0	1
H/TOT	0	0	0	0	0	0	3	0	0	1	0	4	2	1	1	0	0	4
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
10:30	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
10:45	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1
H/TOT	0	0	0	0	0	0	2	0	0	0	0	2	3	0	0	0	0	3
11:00	0	0	0	0	0	0	1	0	0	0	0	1	3	1	0	0	0	4
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2
H/TOT	0	0	0	0	0	0	2	0	0	0	0	2	4	2	0	0	0	6
12:00	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1
12:15	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	1
12:30	0	0	1	0	0	1	1	0	0	1	0	2	1	0	0	0	0	1
12:45	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0
H/TOT	1	0	1	0	0	2	1	2	0	1	0	4	2	0	0	1	0	3

ABACUS TRANSPORTATION SURVEYS

MACROOM TRAFFIC COUNT **JANUARY 2007**
MANUAL CLASSIFIED JUNCTION COUNT **ATH/07/014**

SITE: 01 DATE: 16th January 2007
LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

	MOVEMENT 4						MOVEMENT 5						MOVEMENT 6					
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0
07:30	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0
07:45	0	0	0	0	0	0	6	0	0	0	0	6	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	14	0	0	0	0	14	0	0	0	0	0	0
08:00	0	0	0	0	0	0	5	0	0	0	1	6	0	0	0	0	0	0
08:15	0	0	0	1	0	1	3	1	0	0	0	4	0	0	0	0	0	0
08:30	5	0	0	0	0	5	5	0	0	0	0	5	0	0	0	0	0	0
08:45	0	0	1	0	0	1	4	1	0	0	0	5	0	0	0	0	0	0
H/TOT	5	0	1	1	0	7	17	2	0	0	1	20	0	0	0	0	0	0
09:00	6	2	0	0	0	8	7	1	0	0	0	8	0	0	0	0	0	0
09:15	3	1	1	0	0	5	10	2	0	0	0	12	1	0	0	0	0	1
09:30	3	0	1	0	0	4	2	2	0	1	0	5	0	0	0	0	0	0
09:45	3	1	0	1	0	5	5	0	1	0	0	6	0	0	0	0	0	0
H/TOT	15	4	2	1	0	22	24	5	1	1	0	31	1	0	0	0	0	1
10:00	3	2	0	0	0	5	5	2	0	0	0	7	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30	0	1	0	0	0	1	4	0	0	0	0	4	0	0	0	0	0	0
10:45	3	0	0	0	0	3	4	1	1	0	0	6	0	0	0	0	0	0
H/TOT	6	3	0	0	0	9	13	3	1	0	0	17	0	0	0	0	0	0
11:00	4	0	0	0	0	4	5	0	0	0	0	5	0	0	0	0	0	0
11:15	5	1	0	1	0	7	3	0	0	0	0	3	0	0	0	0	0	0
11:30	1	3	0	0	0	4	2	1	0	1	0	4	0	0	0	0	0	0
11:45	3	0	0	1	0	4	2	0	0	0	0	2	0	0	0	0	0	0
H/TOT	13	4	0	2	0	19	12	1	0	1	0	14	0	0	0	0	0	0
12:00	4	0	0	0	0	4	5	2	0	0	0	7	0	0	0	0	0	0
12:15	6	0	0	0	0	6	3	1	0	1	0	5	1	0	0	0	0	1
12:30	6	1	0	0	0	7	2	1	1	0	0	4	1	0	0	0	0	1
12:45	3	0	1	0	0	4	1	0	0	0	0	1	0	0	1	0	0	1
H/TOT	19	1	1	0	0	21	11	4	1	1	0	17	2	0	1	0	0	3

ABACUS TRANSPORTATION SURVEYS

MACROOM TRAFFIC COUNT **JANUARY 2007**
MANUAL CLASSIFIED JUNCTION COUNT **ATH/07/014**

SITE: 01 DATE: 16th January 2007
LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

	MOVEMENT 1						MOVEMENT 2						MOVEMENT 3						MOVEMENT 4						MOVEMENT 5						MOVEMENT 6					
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**TIME**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**
13:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	13:00	1	0	0	0	0	1	2	0	0	1	0	3	0	0	0	0	0	0
13:15	1	0	0	0	0	1	1	0	0	0	0	1	2	0	0	0	0	2	13:15	2	0	0	0	0	2	2	1	0	0	0	3	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	13:30	3	1	0	0	0	4	4	0	0	0	0	4	0	0	0	0	0	0
13:45	0	0	0	0	0	0	1	1	0	0	0	2	0	0	1	0	0	1	13:45	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
H/TOT	1	0	0	0	0	1	2	1	0	0	0	3	5	0	1	0	0	6	**H/TOT**	10	1	0	0	0	11	8	1	0	1	0	10	0	0	0	0	0	0
14:00	0	0	0	0	0	0	2	0	1	0	0	3	3	0	0	0	0	3	14:00	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1
14:15	0	0	0	1	0	1	0	0	0	0	0	0	2	0	0	0	0	2	14:15	0	1	0	1	0	2	2	1	1	0	0	4	0	0	0	1	0	1
14:30	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	14:30	6	0	0	0	0	6	1	0	0	1	0	2	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14:45	2	1	0	1	0	4	2	1	1	0	0	4	0	0	0	0	0	0
H/TOT	0	0	0	1	0	1	2	0	1	0	0	3	6	1	0	0	0	7	**H/TOT**	8	3	0	2	0	13	5	2	2	1	0	10	0	0	0	2	0	2
15:00	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	15:00	4	0	0	0	0	4	4	2	0	0	0	6	0	0	0	0	0	0
15:15	0	0	0	1	0	1	0	1	0	0	0	1	0	0	0	0	0	0	15:15	6	2	0	0	0	8	2	0	0	1	0	3	0	0	0	1	0	1
15:30	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	15:30	3	1	0	0	0	4	4	0	0	0	0	4	0	0	0	1	0	1
15:45	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	15:45	5	0	0	0	0	5	4	1	0	0	0	5	0	0	0	0	0	0
H/TOT	0	0	0	3	0	3	1	1	0	0	0	2	2	0	0	0	0	2	**H/TOT**	18	3	0	0	0	21	14	3	0	1	0	18	0	0	0	2	0	2
16:00	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	16:00	1	1	0	0	0	2	2	1	0	0	0	3	0	0	0	1	0	1
16:15	0	0	0	0	0	0	1	0	0	0	0	1	3	0	1	0	0	4	16:15	3	0	0	1	1	5	3	0	1	0	0	4	0	0	0	1	0	1
16:30	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	0	0	16:30	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0
16:45	0	0	0	0	0	0	1	0	0	0	0	1	2	2	0	0	0	4	16:45	2	1	0	0	0	3	2	0	0	1	0	3	0	0	0	1	0	1
H/TOT	0	0	0	2	0	2	2	0	1	0	0	3	6	2	1	0	0	9	**H/TOT**	6	2	0	1	1	10	9	1	1	1	0	12	0	0	0	3	0	3
17:00	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	17:00	3	1	1	0	0	5	2	1	1	0	0	4	0	0	0	0	0	0
17:15	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	17:15	3	0	0	0	0	3	1	0	0	0	0	1	0	0	0	0	0	0
17:30	0	0	0	0	0	0	2	0	1	0	0	3	0	0	0	0	0	0	17:30	5	1	0	0	0	6	2	0	0	0	0	2	0	0	0	0	0	0
17:45	0	0	0	0	0	0	2	0	0	0	0	2	5	0	0	0	0	5	17:45	5	0	0	0	0	5	7	1	0	0	0	8	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	6	0	1	0	0	7	11	0	0	0	0	11	**H/TOT**	16	2	1	0	0	19	12	2	1	0	0	15	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	18:00	11	1	0	0	0	12	2	0	0	0	0	2	0	0	0	0	0	0
18:15	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	18:15	6	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	18:30	11	1	0	0	0	12	1	0	0	0	0	1	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	18:45	2	0	0	0	0	2	3	0	0	0	0	3	0	0	0	0	0	0
H/TOT	0	0	0	0	0	0	2	0	0	0	0	2	7	0	0	0	0	7	**H/TOT**	30	2	0	0	0	32	6	0	0	0	0	6	0	0	0	0	0	0
P/TOT	2	0	1	6	0	9	31	6	5	2	0	44	52	6	3	1	1	63	**P/TOT**	146	25	5	7	1	184	145	24	7	7	1	184	3	0	1	7	0	11

ABACUS TRANSPORTATION SURVEYS

MACROOM TRAFFIC COUNT **JANUARY 2007**
MANUAL CLASSIFIED JUNCTION COUNT **ATH/07/014**

SITE: 01 DATE: 16th January 2007
LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

APPENDIX 4-2

2019 TRAFFIC COUNT DATA

MACROOM TRAFFIC COUNT **30 MAY 2019** **MACROOM TRAFFIC COUNT** **30 MAY 2019**

MANUAL CLASSIFIED JUNCTION COUNT **MANUAL CLASSIFIED JUNCTION COUNT**

SITE: 01 DATE: 30-May-19 SITE: 01 DATE: 30-May-19

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Thursday LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Thursday

	MOVEMENT 1						MOVEMENT 2						MOVEMENT 3							MOVEMENT 4						MOVEMENT 5						MOVEMENT 6						
TIME	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**TIME**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	**CAR**	**LGV**	**OGV1**	**OGV2**	**BUS**	**TOT**	
07:00	0	0	0	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:15	0	0	0	0	0	0	2	0	0	2	0	4	1	0	0	0	0	1	07:15	0	0	0	0	0	0	1	2	0	0	0	3	0	0	0	0	0	0	
07:30	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	1	1	07:30	0	0	0	0	0	0	5	1	0	0	0	6	0	0	0	0	0	0	
07:45	0	0	0	0	0	0	1	2	0	0	0	3	0	0	0	0	0	0	07:45	1	0	0	0	1	2	8	0	0	1	0	9	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	6	3	0	3	0	12	1	0	0	0	1	2	**H/TOT**	1	0	0	0	1	2	14	3	0	1	0	18	0	0	0	0	0	0	34
08:00	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	08:00	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	
08:15	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	08:15	1	0	0	0	1	2	10	0	0	0	1	11	0	0	1	0	0	1	
08:30	1	0	0	0	0	1	4	0	0	0	0	4	1	0	0	0	0	1	08:30	3	0	0	1	0	4	3	0	0	0	0	3	0	0	0	0	0	0	
08:45	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	08:45	2	1	1	0	0	4	4	1	1	0	0	6	0	0	0	0	0	0	
H/TOT	1	0	1	0	0	2	6	0	0	0	0	6	6	0	0	0	0	6	**H/TOT**	6	1	1	1	1	10	19	1	1	0	1	22	0	0	1	0	0	1	47
09:00	0	0	0	0	0	0	1	0	0	0	0	1	2	0	1	0	0	3	09:00	6	0	0	0	0	6	10	0	0	0	0	10	1	0	0	0	0	1	
09:15	0	0	0	0	0	0	5	0	0	0	0	5	1	1	1	0	0	3	09:15	1	0	0	0	0	1	5	0	0	0	0	5	0	0	0	0	0	0	
09:30	0	0	0	0	0	0	2	1	1	0	0	4	2	0	0	1	0	3	09:30	2	0	0	0	0	2	4	1	1	0	0	6	0	0	0	0	0	0	
09:45	0	0	0	0	0	0	2	0	1	0	0	3	2	1	1	0	0	4	09:45	2	0	0	0	0	2	5	0	0	0	0	5	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	10	1	2	0	0	13	7	2	3	1	0	13	**H/TOT**	11	0	0	0	0	11	24	1	1	0	0	26	1	0	0	0	0	1	64
10:00	2	0	0	0	0	2	4	0	0	0	0	4	2	0	0	0	0	2	10:00	6	0	0	0	0	6	3	0	0	0	0	3	1	0	0	0	0	1	
10:15	0	0	0	0	0	0	3	1	1	0	0	5	1	0	0	0	0	1	10:15	2	0	0	0	0	2	2	0	0	0	0	2	0	0	0	0	0	0	
10:30	0	0	0	0	0	0	3	0	0	0	0	3	1	0	0	0	0	1	10:30	5	0	0	1	0	6	1	0	0	1	0	2	0	0	0	0	0	0	
10:45	0	0	0	0	0	0	0	0	0	2	0	2	3	0	1	0	0	4	10:45	3	0	0	1	0	4	4	0	0	0	0	4	0	0	1	0	0	1	
H/TOT	2	0	0	0	0	2	10	1	1	2	0	14	7	0	1	0	0	8	**H/TOT**	16	0	0	2	0	18	10	0	0	1	0	11	1	0	1	0	0	2	55
11:00	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	11:00	5	0	0	0	0	5	5	0	3	0	0	8	0	0	0	0	0	0	
11:15	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	11:15	3	0	1	1	0	5	6	0	0	1	0	7	0	0	0	0	0	0	
11:30	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	11:30	3	0	1	0	0	4	4	0	2	1	0	7	0	0	0	0	0	0	
11:45	0	0	0	0	0	0	3	0	0	0	0	3	0	1	0	0	0	1	11:45	5	0	1	0	0	6	7	0	1	0	0	8	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	9	0	0	0	0	9	5	1	0	0	0	6	**H/TOT**	16	0	3	1	0	20	22	0	6	2	0	30	0	0	0	0	0	0	65
12:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	12:00	7	1	1	0	0	9	5	0	3	0	0	8	1	1	0	0	0	2	
12:15	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	1	0	3	12:15	4	0	1	0	0	5	3	0	1	0	0	4	0	0	0	0	0	0	
12:30	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	12:30	3	0	1	0	0	4	2	0	2	0	0	4	0	0	0	0	0	0	
12:45	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	12:45	3	0	3	0	0	6	0	0	2	0	0	2	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	3	0	0	0	0	3	6	0	0	1	0	7	**H/TOT**	17	1	6	0	0	24	10	0	8	0	0	18	1	1	0	0	0	2	54

MACROOM TRAFFIC COUNT **MAY 2019** **MACROOM TRAFFIC COUNT** **MAY 2019**

MANUAL CLASSIFIED JUNCTION COUNT **MANUAL CLASSIFIED JUNCTION COUNT**

SITE: 01 DATE: 30 May 2019 SITE: 01 DATE: 30 May 2019

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Thursday LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Thursday

	MOVEMENT 1						MOVEMENT 2						MOVEMENT 3							MOVEMENT 4						MOVEMENT 5						MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	
13:00	7	0	0	0	0	7	5	0	2	0	0	7	0	0	0	0	0	0	13:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	
13:15	0	0	2	0	0	2	3	0	2	0	0	5	0	0	0	0	0	0	13:15	0	0	0	0	0	0	1	0	0	0	0	1	4	0	0	0	0	4	
13:30	4	0	2	1	0	7	7	0	0	0	0	7	0	0	0	0	0	0	13:30	0	0	0	0	0	0	2	0	0	1	0	3	3	0	0	0	0	3	
13:45	4	0	1	0	0	5	6	0	0	0	0	6	0	0	0	1	0	1	13:45	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	2	
H/TOT	15	0	5	1	0	21	21	0	4	0	0	25	0	0	0	1	0	1	**H/TOT**	0	0	0	0	0	0	5	0	0	1	0	6	10	0	0	0	0	10	63
14:00	2	0	0	0	0	2	10	0	0	0	0	10	0	0	0	0	0	0	14:00	2	0	0	0	0	2	0	0	0	0	0	0	1	0	1	0	0	2	
14:15	3	0	0	0	0	3	4	0	3	0	0	7	0	0	0	0	0	0	14:15	0	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	
14:30	1	1	0	0	0	2	2	0	0	0	0	2	0	0	0	0	0	0	14:30	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	
14:45	5	1	0	0	0	6	4	0	0	0	0	4	0	0	0	0	0	0	14:45	0	0	0	0	0	0	4	0	0	0	0	4	1	0	0	0	0	1	
H/TOT	11	2	0	0	0	13	20	0	3	0	0	23	0	0	0	0	0	0	**H/TOT**	2	0	0	0	0	2	6	0	1	0	0	7	3	0	1	0	0	4	49
15:00	3	0	1	0	0	4	5	0	0	0	0	5	0	0	0	0	0	0	15:00	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	1	0	1	
15:15	2	0	1	0	0	3	2	0	1	0	0	3	0	0	0	0	0	0	15:15	0	0	0	0	0	0	4	0	0	0	0	4	3	0	0	0	0	3	
15:30	9	1	1	0	0	11	2	0	2	0	0	4	0	0	0	0	0	0	15:30	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	
15:45	8	0	1	0	0	9	2	0	1	0	0	3	0	0	0	0	0	0	15:45	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	
H/TOT	22	1	4	0	0	27	11	0	4	0	0	15	0	0	0	0	0	0	**H/TOT**	0	0	0	0	0	0	7	0	0	0	0	7	8	0	0	1	0	9	58
16:00	3	0	1	0	0	4	1	1	1	0	0	3	0	0	0	0	0	0	16:00	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	
16:15	5	0	2	0	1	8	2	0	1	0	0	3	1	0	1	0	0	2	16:15	0	0	0	0	0	0	3	0	0	0	0	3	6	2	0	0	0	8	
16:30	3	0	1	0	0	4	2	0	2	0	0	4	0	0	0	0	0	0	16:30	0	0	0	0	0	0	1	0	0	0	0	1	4	0	0	0	0	4	
16:45	4	0	1	0	0	5	0	0	1	0	0	1	0	0	0	0	0	0	16:45	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	1	0	3	
H/TOT	15	0	5	0	1	21	5	1	5	0	0	11	1	0	1	0	0	2	**H/TOT**	0	0	0	0	0	0	7	0	0	0	0	7	14	2	0	1	0	17	58
17:00	4	0	2	0	0	6	5	0	1	0	0	6	0	0	0	0	0	0	17:00	0	0	0	0	0	0	1	0	0	0	0	1	5	0	0	0	0	5	
17:15	1	1	1	0	0	3	2	0	2	0	0	4	0	0	0	0	0	0	17:15	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	2	0	6	
17:30	4	0	1	0	0	5	5	0	0	0	0	5	0	0	0	0	0	0	17:30	0	0	0	0	0	0	3	0	0	0	0	3	5	0	0	0	0	5	
17:45	9	1	0	0	0	10	2	0	0	0	0	2	0	0	0	0	0	0	17:45	0	0	0	0	0	0	1	0	0	1	0	2	3	0	0	1	0	4	
H/TOT	18	2	4	0	0	24	14	0	3	0	0	17	0	0	0	0	0	0	**H/TOT**	0	0	0	0	0	0	5	0	0	1	0	6	16	0	1	3	0	20	67
18:00	5	0	1	0	0	6	4	1	1	0	0	6	0	0	0	0	0	0	18:00	0	0	0	0	0	0	2	0	0	0	0	2	3	0	0	0	0	3	
18:15	4	0	1	0	0	5	3	2	1	0	0	6	0	0	0	0	0	0	18:15	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	
18:30	4	0	1	0	0	5	2	0	3	0	0	5	0	0	0	0	0	0	18:30	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	
18:45	7	0	0	0	0	7	4	0	1	0	0	5	0	0	0	0	0	0	18:45	0	0	0	0	0	0	2	0	0	0	0	2	0	2	2	0	0	4	
H/TOT	20	0	3	0	0	23	13	3	6	0	0	22	0	0	0	0	0	0	**H/TOT**	0	0	0	0	0	0	6	0	0	0	0	6	7	2	2	0	0	11	62
P/TOT	104	5	22	1	1	133	128	9	28	5	0	170	33	3	5	3	1	45	**P/TOT**	69	2	10	4	2	87	135	5	17	6	1	164	61	5	6	5	0	77	676
						132						165						42							83						158						72	

MACROOM TRAFFIC COUNT **08 OCTOBER 2019**

MANUAL CLASSIFIED JUNCTION COUNT

SITE: 01 DATE: 08-Oct-19

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

	MOVEMENT 1						MOVEMENT 2						MOVEMENT 3							
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT		
07:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1		
07:15	0	0	0	0	0	0	3	0	0	3	0	6	1	0	0	0	0	1		
07:30	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	1	1		
07:45	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0		
H/TOT	0	0	0	0	0	0	5	2	0	3	0	10	2	0	0	0	1	3		
08:00	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1		
08:15	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3		
08:30	0	0	0	0	0	0	4	0	0	0	0	4	1	0	0	1	0	2		
08:45	1	0	0	0	0	1	2	0	0	0	0	2	1	0	0	0	0	1		
H/TOT	1	0	0	0	0	1	8	0	0	0	0	8	6	0	0	1	0	7		
09:00	0	0	0	0	0	0	3	0	0	0	0	3	2	0	1	0	0	3		
09:15	0	0	0	0	0	0	5	0	0	0	0	5	1	1	0	0	0	2		
09:30	0	0	0	0	0	0	1	1	1	0	0	3	3	0	0	1	0	4		
09:45	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1		
H/TOT	0	0	0	0	0	0	9	1	2	0	0	12	6	1	2	1	0	10		
10:00	1	0	0	0	0	1	2	0	0	0	0	2	2	0	0	0	0	2		
10:15	1	0	0	0	0	1	2	1	1	0	0	4	0	0	0	0	0	0		
10:30	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0		
10:45	0	0	0	0	0	0	0	0	0	2	0	2	2	0	1	0	0	3		
H/TOT	2	0	0	0	0	2	8	1	1	2	0	12	4	0	1	0	0	5		
11:00	0	0	0	0	0	0	1	0	0	0	0	1	4	0	0	0	0	4		
11:15	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0		
11:30	0	0	0	0	0	0	3	0	0	1	0	4	3	0	0	0	0	3		
11:45	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	1		
H/TOT	0	0	0	0	0	0	8	0	0	1	0	9	7	1	0	0	0	8		
12:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1		
12:15	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	1	0	3		
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
12:45	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	1	0	4		
H/TOT	0	0	0	0	0	0	2	0	0	0	0	2	6	0	0	2	0	8		

MACROOM TRAFFIC COUNT **08 OCTOBER 2019**

MANUAL CLASSIFIED JUNCTION COUNT

SITE: 01 DATE: 08-Oct-19

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

	MOVEMENT 4						MOVEMENT 5						MOVEMENT 6							
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT		
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
07:15	0	0	0	0	0	0	1	2	0	0	0	3	0	0	0	0	0	0		
07:30	0	0	0	0	0	0	5	1	0	0	0	6	0	0	0	0	0	0		
07:45	1	0	0	0	1	2	7	0	0	1	0	8	0	0	0	0	0	0		
H/TOT	1	0	0	0	1	2	13	3	0	1	0	17	0	0	0	0	0	0		32
08:00	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0		
08:15	1	0	0	0	1	2	9	0	0	0	1	10	0	0	1	0	0	1		
08:30	2	0	0	1	0	3	6	0	0	0	0	6	0	0	0	0	0	0		
08:45	3	1	1	0	0	5	5	1	1	0	0	7	0	0	0	0	0	0		
H/TOT	6	1	1	1	1	10	22	1	1	0	1	25	0	0	1	0	0	1		52
09:00	6	0	0	0	0	6	11	0	0	0	0	11	0	0	0	0	0	0		
09:15	1	0	0	0	0	1	6	0	0	0	0	6	1	0	0	0	0	1		
09:30	2	0	0	0	0	2	6	1	0	0	0	7	0	0	0	0	0	0		
09:45	2	0	0	1	0	3	3	0	0	0	0	3	0	0	0	0	0	0		
H/TOT	11	0	0	1	0	12	26	1	0	0	0	27	1	0	0	0	0	1		62
10:00	6	0	0	0	0	6	2	0	0	0	0	2	1	0	0	0	0	1		
10:15	1	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0		
10:30	7	0	0	2	0	9	4	0	0	1	0	5	0	0	0	0	0	0		
10:45	2	0	0	1	0	3	3	0	0	0	0	3	0	0	1	0	0	1		
H/TOT	16	0	0	3	0	19	10	0	0	1	0	11	1	0	1	0	0	2		51
11:00	5	0	0	0	0	5	3	0	0	0	0	3	0	0	0	0	0	0		
11:15	3	0	0	1	0	4	4	0	0	2	0	6	0	0	0	0	0	0		
11:30	3	0	0	0	0	3	6	0	0	1	0	7	0	0	0	0	0	0		
11:45	5	0	0	0	0	5	6	0	0	0	0	6	0	0	0	0	0	0		
H/TOT	16	0	0	1	0	17	19	0	0	3	0	22	0	0	0	0	0	0		56
12:00	7	1	0	0	0	8	2	0	0	0	0	2	0	1	0	0	0	1		
12:15	5	0	0	0	0	5	2	0	0	0	0	2	0	0	0	0	0	0		
12:30	3	0	0	0	0	3	3	0	1	0	0	4	0	0	0	0	0	0		
12:45	2	0	0	0	0	2	1	0	0	0	0	1	0	0	0	0	0	0		
H/TOT	17	1	0	0	0	18	8	0	1	0	0	9	0	1	0	0	0	1		38

MACROOM TRAFFIC COUNT **MAY 2019 MACROOM TRAFFIC COUNT** **08 OCTOBER 2019**

MANUAL CLASSIFIED JUNCTION COUNT **MANUAL CLASSIFIED JUNCTION COUNT**

SITE: 01 DATE: 08 October 2019 SITE: 01 DATE: 08 October 2019

LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday LOCATION: Shanakill Road/Macroom Road/Knockeenacuttin Road DAY: Tuesday

	MOVEMENT 1						MOVEMENT 2						MOVEMENT 3							MOVEMENT 4						MOVEMENT 5						MOVEMENT 6						
TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	TIME	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	CAR	LGV	OGV1	OGV2	BUS	TOT	
13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13:00	9	0	0	0	0	9	5	0	0	0	0	5	0	0	0	0	0	0	
13:15	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	13:15	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	
13:30	0	0	0	0	0	0	1	0	0	1	0	2	4	0	0	0	0	4	13:30	3	0	0	1	0	4	6	0	0	0	0	6	0	0	0	0	0	0	
13:45	0	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	2	13:45	4	0	1	1	0	6	7	0	0	0	0	7	0	0	0	1	0	1	
H/TOT	0	0	0	0	0	0	4	0	0	1	0	5	9	0	0	0	0	9	**H/TOT**	16	0	1	2	0	19	22	0	0	0	0	22	0	0	0	1	0	1	56
14:00	1	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	2	14:00	3	0	0	0	0	3	9	0	0	0	0	9	0	0	0	0	0	0	
14:15	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	14:15	4	0	0	0	0	4	6	0	1	0	0	7	0	0	0	0	0	0	
14:30	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	14:30	0	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	
14:45	0	0	0	0	0	0	4	0	0	0	0	4	1	0	0	0	0	1	14:45	3	1	0	1	0	5	4	0	0	0	0	4	0	0	0	0	0	0	
H/TOT	1	0	0	0	0	1	6	0	0	0	0	6	3	0	1	0	0	4	**H/TOT**	10	2	0	1	0	13	20	0	1	0	0	21	0	0	0	0	0	0	45
15:00	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	1	0	1	15:00	3	0	0	0	0	3	5	0	0	0	0	5	0	0	0	0	0	0	
15:15	0	0	0	0	0	0	4	0	0	0	0	4	3	0	0	0	0	3	15:15	3	0	0	0	0	3	1	0	1	0	0	2	0	0	0	0	0	0	
15:30	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	15:30	7	1	0	2	0	10	1	0	0	0	0	1	0	0	0	0	0	0	
15:45	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	15:45	7	0	0	0	0	7	2	0	0	0	0	2	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	7	0	0	0	0	7	7	0	0	1	0	8	**H/TOT**	20	1	0	2	0	23	9	0	1	0	0	10	0	0	0	0	0	0	48
16:00	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	16:00	3	0	0	0	0	3	1	1	0	0	0	2	0	0	0	0	0	0	
16:15	0	0	0	0	0	0	4	0	0	0	0	4	7	2	0	0	0	9	16:15	5	0	0	0	1	6	2	0	1	0	0	3	1	0	0	0	0	1	
16:30	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	1	0	3	16:30	4	0	0	1	0	5	2	0	0	0	0	2	0	0	0	0	0	0	
16:45	0	0	0	0	0	0	3	0	0	0	0	3	1	0	0	0	0	1	16:45	4	0	0	1	0	5	0	0	0	0	0	0	1	0	0	0	0	1	
H/TOT	0	0	0	0	0	0	9	0	0	0	0	9	12	2	0	1	0	15	**H/TOT**	16	0	0	2	1	19	5	1	1	0	0	7	2	0	0	0	0	2	52
17:00	0	0	0	0	0	0	1	0	0	0	0	1	6	0	0	0	0	6	17:00	4	0	0	0	0	4	5	0	1	0	0	6	0	0	0	0	0	0	
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	17:15	1	1	0	0	0	2	2	0	2	0	0	4	0	0	0	0	0	0	
17:30	0	0	0	0	0	0	2	0	0	0	0	2	3	0	0	0	0	3	17:30	4	0	0	0	0	4	5	0	0	0	0	5	0	0	0	0	0	0	
17:45	0	0	0	0	0	0	3	0	0	1	0	4	7	0	0	2	0	9	17:45	9	1	0	0	0	10	3	0	0	0	0	3	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	6	0	0	1	0	7	16	0	0	3	0	19	**H/TOT**	18	2	0	0	0	20	15	0	3	0	0	18	0	0	0	0	0	0	64
18:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	18:00	6	0	1	0	0	7	4	1	0	0	0	5	0	0	0	0	0	0	
18:15	0	0	0	0	0	0	3	0	0	0	0	3	3	0	0	0	0	3	18:15	3	0	1	0	0	4	4	2	0	0	0	6	0	0	0	0	0	0	
18:30	0	0	0	0	0	0	1	0	0	0	0	1	3	0	0	0	0	3	18:30	3	0	1	0	0	4	2	0	0	0	0	2	0	0	0	0	0	0	
18:45	0	0	0	0	0	0	2	0	0	0	0	2	0	2	0	0	0	2	18:45	7	0	0	0	0	7	5	0	0	0	0	5	0	0	0	0	0	0	
H/TOT	0	0	0	0	0	0	6	0	0	0	0	6	9	2	0	0	0	11	**H/TOT**	19	0	3	0	0	22	15	3	0	0	0	18	0	0	0	0	0	0	57
P/TOT	4	0	0	0	0	4	78	4	3	8	0	93	87	6	4	9	1	107	**P/TOT**	166	7	5	13	3	194	184	9	8	5	1	207	4	1	2	1	0	8	613	613
						4						85						98						181						202						7	

APPENDIX 5-1

RESIDUAL SURVEY DETAILS

Appendix 5-1: Survey details 24.10.19

Project	
Project ref.	231
Client	Keohane Geological & Environmental Consultancy OBO Drimoleague Concrete Works Ltd.
Location	DCWL Sand & Gravel Pit Ummera Macroom Co. Cork
Stations	Onsite: N2 N3 N4 Offsite: N1
Microphone positions	Free field 1.5 m above ground level
Time	Thursday 24.10.19 0730-1315
Purpose	Residual survey
Comment	DCWL washing plant shut down; limited loader use
Operator	Damian Brosnan BSc MSc MIOA MIEI
Standard	ISO 1996 (2016 & 2017)
Field calibrator	Bruel & Kjaer Type 4231 Serial 2342544 Laboratory verification 14.02.19 by Sonitus Systems

Weather	
Cloud cover	10 %
Precipitation	0 mm
Temperature	4 rising to 10 °C
Wind direction	SW
Wind speed	0-1 m/s
Wind measurement	Anemo anemometer 2 m above ground level

Instrument 1	
Stations used	N4
Instrument	NTi XL2 ('xl1') IEC 61672-1:2013 Class 1
SLM serial	A2A-13658-E0
Microphone serial	A14735 + pre-amp 7066
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	14.02.19 by Sonitus Systems Compliance certificate available on request
Field calibration	24.10.19 0955 @ 39.2 mV/Pa
Post survey drift check	93.9 dB

Instrument 2	
Stations used	N2
Instrument	NTi XL2 ('xl2') IEC 61672-1:2013 Class 1
SLM serial	A2A-14337-E0
Microphone serial	A14972 + pre-amp 7266
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	14.02.19 by Sonitus Systems Compliance certificate available on request
Field calibration	24.10.19 0754 @ 43.4 mV/Pa
Post survey drift check	93.9 dB

Instrument 3	
Stations used	N3
Instrument	NTi XL2 ('xl3') IEC 61672-1:2013 Class 1
SLM serial	A2A-15392-E0
Microphone serial	A16340 + pre-amp 7956
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	13.12.18 by NTi Compliance certificate available on request
Field calibration	24.10.19 0733 @ 44.1 mV/Pa
Post survey drift check	93.9 dB

Instrument 4	
Stations used	N1
Instrument	NTi XL2 ('xl4') IEC 61672-1:2013 Class 1
SLM serial	A2A-15429-E0
Microphone serial	A16329 + pre-amp 7945
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	13.12.18 by NTi Compliance certificate available on request
Field calibration	24.10.19 0731 @ 42.2 mV/Pa
Post survey drift check	93.9 dB

Uncertainty	
Residual noise	u_i = 0.5 dB c_i = 1 dB where source dominates, >20 dB where source becomes masked c_iu_i range = 0.5 to >10 dB
Weather conditions	Levels representative of contemporaneous conditions only c_iu_i = 2 dB at wind vector + or x Otherwise c_iu_i >2 dB
Anemometer height	Not possible to measure wind speed at 10 m Anemometer height of 2 m may increase meteorological uncertainty
Precipitation	Precipitation = 0 mm during reported intervals c_iu_i = 0 dB
Operating conditions	Levels representative of contemporaneous operating conditions only c_iu_i <1 dB
Location	c_iu_i = 0 dB at free field positions c_iu_i = 0.4 dB at near field & reflective field positions
Instrument	IEC 61672-1 class 1 specifications u = 0.5 dB.
Combined	3 dB to >10 dB, depending on position Variation chiefly to meteorology & residual noise intrusion
Expanded	6 dB to >10 dB, 95 % coverage

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APPENDIX 5-2

RESIDUAL PROFILES

Appendix 5-2: Survey Details 31.10.19

Project	
Project ref.	231
Client	Keohane Geological & Environmental Consultancy OBO Drimoleague Concrete Works Ltd.
Location	DCWL Sand & Gravel Pit Ummera Macroom Co. Cork
Stations	Onsite: N2 N3 N4 Offsite: N1
Microphone positions	Free field 1.5 m above ground level
Time	Thursday 31.10.19 0900-1600
Purpose	Quarry survey
Comment	DCWL washing plant in continuous use
Operator	Damian Brosnan BSc MSc MIOA MIEI
Standard	ISO 1996 (2016 & 2017)
Field calibrator	Bruel & Kjaer Type 4231 Serial 2342544 Laboratory verification 14.02.19 by Sonitus Systems

Weather	
Cloud cover	100 %
Precipitation	0 mm
Temperature	12 °C
Wind direction	SW
Wind speed	0-2 m/s
Wind measurement	Anemo anemometer 2 m above ground level

Instrument 1	
Stations used	N2
Instrument	NTi XL2 ('xl1') IEC 61672-1:2013 Class 1
SLM serial	A2A-13658-E0
Microphone serial	A14735 + pre-amp 7066
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	14.02.19 by Sonitus Systems Compliance certificate available on request
Field calibration	31.10.19 0904 @ 39.6 mV/Pa
Post survey drift check	93.9 dB

Instrument 2	
Stations used	N4
Instrument	NTi XL2 ('xl2') IEC 61672-1:2013 Class 1
SLM serial	A2A-14337-E0
Microphone serial	A14972 + pre-amp 7266
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	14.02.19 by Sonitus Systems Compliance certificate available on request
Field calibration	31.10.19 0855 @ 43.9 mV/Pa
Post survey drift check	93.9 dB

Instrument 3	
Stations used	N3
Instrument	NTi XL2 ('xl3') IEC 61672-1:2013 Class 1
SLM serial	A2A-15392-E0
Microphone serial	A16340 + pre-amp 7956
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	13.12.18 by NTi Compliance certificate available on request
Field calibration	31.10.19 0849 @ 43.6 mV/Pa
Post survey drift check	93.9 dB

Instrument 4	
Stations used	N1
Instrument	NTi XL2 ('xl4') IEC 61672-1:2013 Class 1
SLM serial	A2A-15429-E0
Microphone serial	A16329 + pre-amp 7945
Range	0-100 dB
Intervals	Logging at 1 s with audio Relevant intervals extracted
Time weighting	Fast
Frequency weighting	Broadband: A+C Spectrum: Z
Laboratory verification	13.12.18 by NTi Compliance certificate available on request
Field calibration	31.10.19 1916 @ 41.7 mV/Pa
Post survey drift check	93.9 dB

Uncertainty	
Residual noise	u_i = 0.5 dB c_i = 1 dB where source dominates, >20 dB where source becomes masked c_iu_i range = 0.5 to >10 dB
Weather conditions	Levels representative of contemporaneous conditions only c_iu_i = 2 dB at wind vector + or x Otherwise c_iu_i >2 dB
Anemometer height	Not possible to measure wind speed at 10 m Anemometer height of 2 m may increase meteorological uncertainty
Precipitation	Precipitation = 0 mm during reported intervals c_iu_i = 0 dB
Operating conditions	Levels representative of contemporaneous operating conditions only c_iu_i <1 dB
Location	c_iu_i = 0 dB at free field positions c_iu_i = 0.4 dB at near field & reflective field positions
Instrument	IEC 61672-1 class 1 specifications u = 0.5 dB.
Combined	3 dB to >10 dB, depending on position Variation chiefly to meteorology & residual noise intrusion
Expanded	6 dB to >10 dB, 95 % coverage

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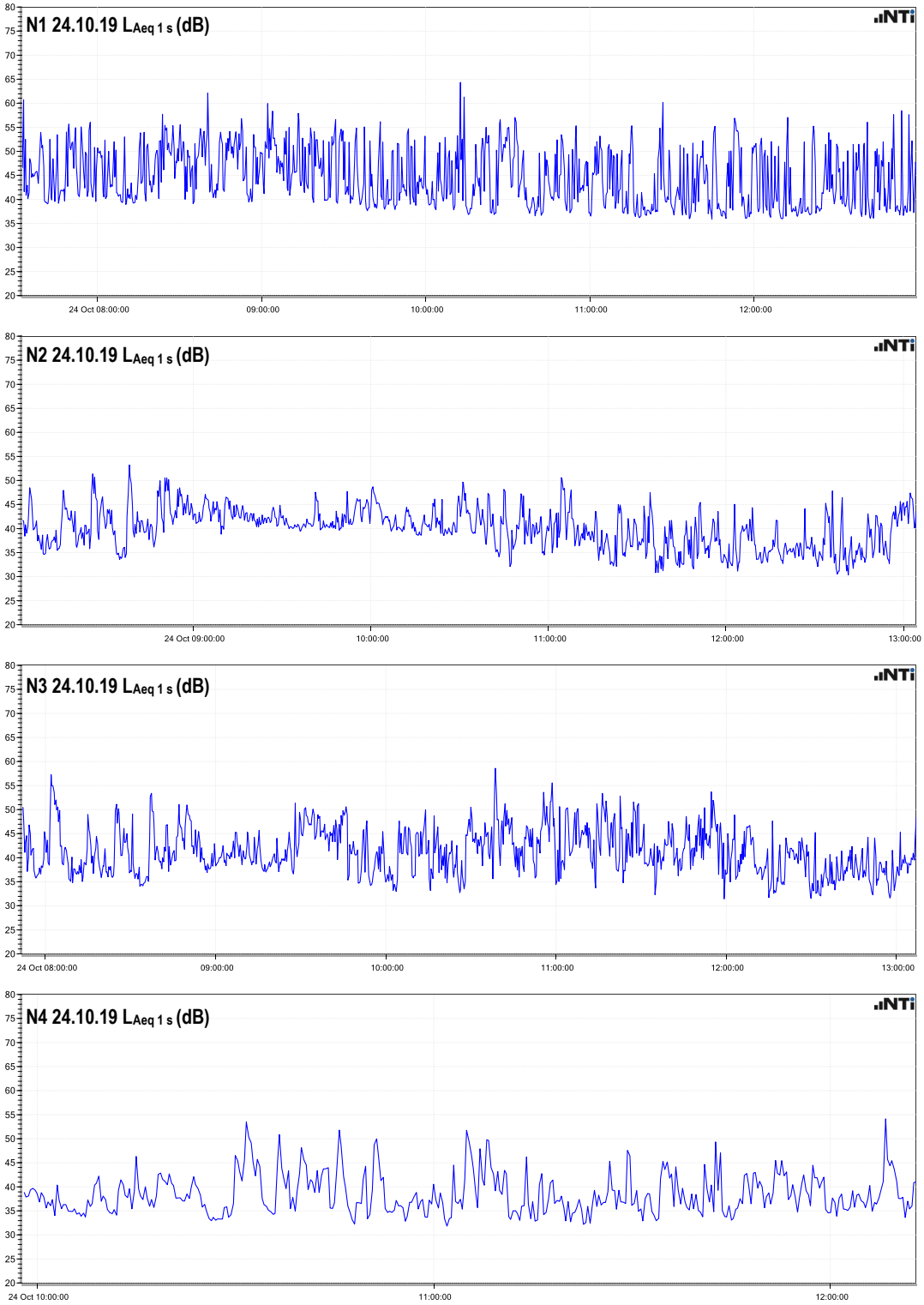
APPENDIX 5-3

GRAVEL PIT SURVEY DETAILS

Appendix 5-3: Baseline Profiles



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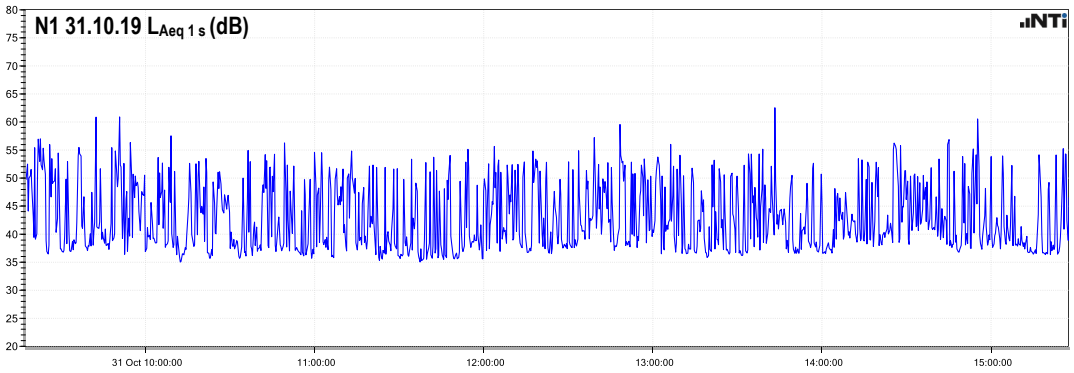
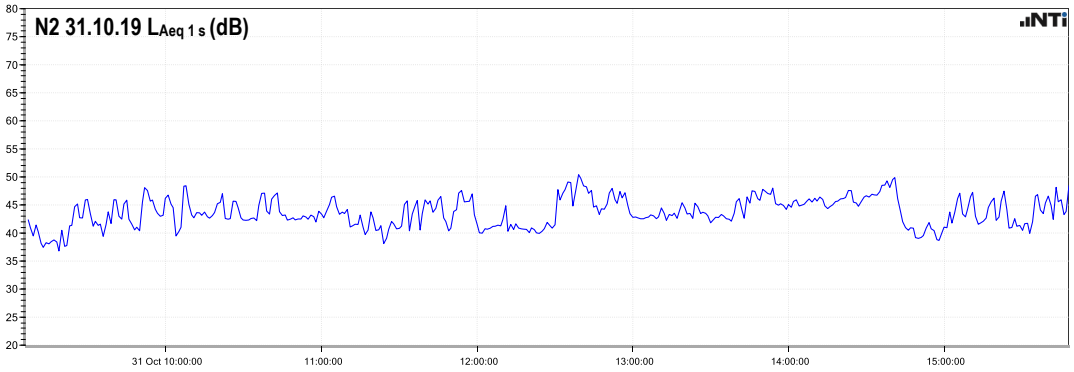
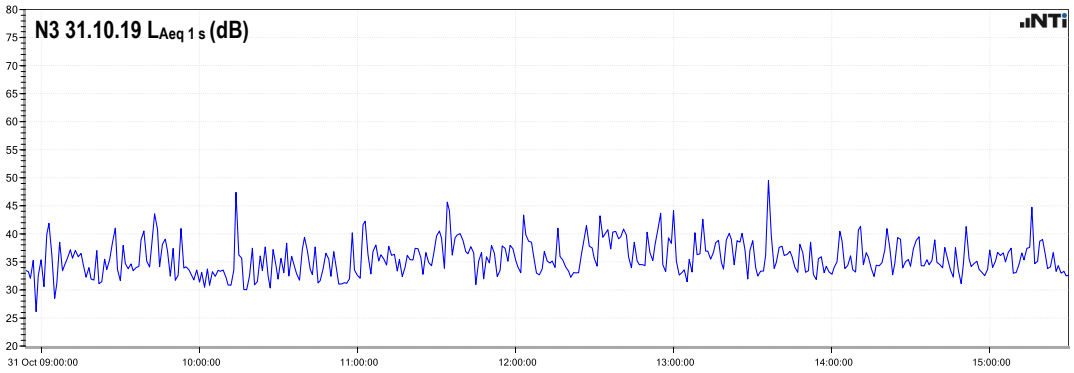
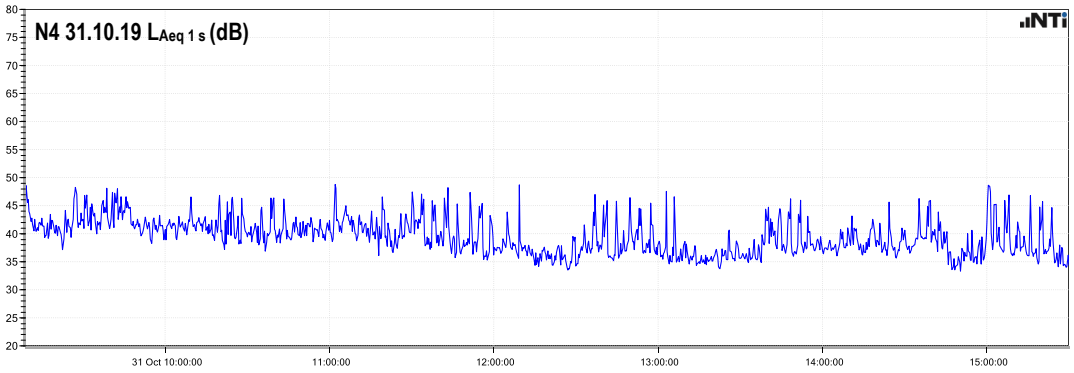

N1 31.10.19 LAeq 1 s (dB)
80
75
70
65
60
55
50
45
40
35
30
25
20
31 Oct 10:00:00
11:00:00
12:00:00
13:00:00
14:00:00
15:00:00


N2 31.10.19 LAeq 1 s (dB)
80
75
70
65
60
55
50
45
40
35
30
25
20
31 Oct 10:00:00
11:00:00
12:00:00
13:00:00
14:00:00
15:00:00


N3 31.10.19 LAeq 1 s (dB)
80
75
70
65
60
55
50
45
40
35
30
25
20
31 Oct 09:00:00
10:00:00
11:00:00
12:00:00
13:00:00
14:00:00
15:00:00


N4 31.10.19 LAeq 1 s (dB)
80
75
70
65
60
55
50
45
40
35
30
25
20
31 Oct 10:00:00
11:00:00
12:00:00
13:00:00
14:00:00
15:00:00

APPENDIX 5-4

NOISE PROFILES

Appendix 5-4: Baseline noise data

Survey 1: 24.10.19

Station	N1 (dB)			N2 (dB)			N3 (dB)			N4 (dB)		
	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$
0745-0800	50	55	39	-	-	-	-	-	-	-	-	-
0800-0815	46	48	39	-	-	-	47	53	35	-	-	-
0815-0830	51	56	40	44	48	36	43	48	36	-	-	-
0830-0845	51	55	39	43	47	34	44	47	35	-	-	-
0845-0900	50	55	39	45	49	38	45	49	38	-	-	-
0800-0900	**50**	**54**	**39**	**44**	**48**	**36**	**45**	**49**	**36**	**-**	**-**	**-**
0900-0915	52	56	39	44	46	41	41	44	38	-	-	-
0915-0930	50	55	39	42	44	40	42	43	36	-	-	-
0930-0945	48	51	38	42	42	40	47	51	36	-	-	-
0945-1000	47	51	38	43	46	40	43	47	34	-	-	-
0900-1000	**49**	**53**	**39**	**43**	**45**	**40**	**43**	**46**	**36**	**-**	**-**	**-**
1000-1015	51	53	37	43	45	39	43	46	33	38	41	33
1015-1030	50	54	37	42	45	39	42	46	33	39	42	33
1030-1045	48	50	37	43	47	34	48	51	36	44	48	34
1045-1100	47	51	37	41	45	33	47	50	32	42	46	32
1000-1100	**49**	**52**	**37**	**42**	**46**	**36**	**45**	**48**	**34**	**41**	**44**	**33**
1100-1115	47	51	37	43	47	34	46	51	32	43	47	32
1115-1130	48	48	36	39	43	32	47	52	33	39	41	32
1130-1145	45	50	36	39	41	31	42	45	33	40	43	31
1145-1200	49	53	36	39	42	31	46	50	32	41	45	33
1100-1200	**47**	**51**	**36**	**40**	**43**	**32**	**45**	**50**	**33**	**41**	**44**	**32**
1200-1215	47	51	36	38	41	32	42	46	32	42	44	32
1215-1230	46	49	37	37	39	33	40	45	33	-	-	-
1230-1245	47	51	36	39	41	30	38	40	31	-	-	-
1245-1300	49	50	37	40	44	32	38	41	32	-	-	-
1200-1300	**47**	**50**	**37**	**39**	**41**	**32**	**40**	**43**	**32**	**-**	**-**	**-**
Average 1 h	**48**	**52**	**38**	**42**	**45**	**35**	**44**	**47**	**34**	**41**	**44**	**33**

Survey 2: 31.10.19.

Station	N1 (dB)			N2 (dB)			N3 (dB)			N4 (dB)		
	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$	$L_{Aeq\ T}$	$L_{AF10\ T}$	$L_{AF90\ T}$
0900-0915	-	-	-	-	-	-	37	40	27	41	44	29
0915-0930	-	-	-	42	46	36	35	38	31	42	45	38
0930-0945	49	50	36	43	47	39	38	40	32	44	47	40
0945-1000	50	54	36	45	48	39	36	38	30	42	45	39
0900-1000	**-**	**-**	**-**	**-**	**-**	**-**	**37**	**39**	**30**	**43**	**45**	**35**
1000-1015	46	49	35	45	48	40	37	37	29	42	44	39
1015-1030	47	52	36	44	47	42	34	38	29	42	45	38
1030-1045	47	50	36	45	48	42	36	39	31	42	44	38
1045-1100	47	50	36	43	44	42	35	36	30	41	44	38
1000-1100	**47**	**51**	**36**	**44**	**47**	**42**	**36**	**38**	**30**	**42**	**44**	**38**
1100-1115	48	53	36	44	46	40	37	39	32	42	45	38
1115-1130	45	48	36	41	43	38	36	39	29	41	43	36
1130-1145	45	47	35	44	47	39	40	43	30	43	46	37
1145-1200	46	48	36	45	48	40	36	40	31	41	44	36
1100-1200	**46**	**49**	**36**	**44**	**47**	**39**	**38**	**41**	**30**	**42**	**45**	**36**
1200-1215	48	53	36	41	43	39	37	38	33	39	40	35
1215-1230	47	51	36	41	43	39	37	41	32	36	38	34
1230-1245	48	51	38	48	50	44	40	42	34	40	43	35
1245-1300	49	53	37	46	48	42	39	42	33	40	42	36
1200-1300	**48**	**52**	**37**	**45**	**49**	**39**	**38**	**41**	**32**	**39**	**41**	**35**
1300-1315	48	53	36	43	45	41	37	39	31	38	39	35
1315-1330	46	49	36	44	46	41	38	41	31	36	38	34
1330-1345	50	51	36	44	46	41	40	40	32	40	43	35
1345-1400	44	47	37	46	49	44	35	38	32	40	43	36
1300-1400	**47**	**50**	**36**	**45**	**47**	**41**	**38**	**39**	**31**	**39**	**41**	**35**
1400-1415	44	46	37	46	47	43	37	39	33	39	41	36
1415-1430	49	53	38	46	48	44	37	40	32	39	42	36
1430-1445	48	52	38	47	50	42	36	39	33	41	43	37
1445-1500	49	49	37	40	42	38	36	37	31	37	39	34
1400-1500	**48**	**51**	**37**	**46**	**49**	**39**	**36**	**39**	**32**	**39**	**41**	**35**
1500-1515	43	43	37	44	47	40	36	38	33	42	45	36
1515-1530	-	-	-	44	47	40	37	39	32	39	42	34
Average 1 h	**47**	**50**	**36**	**45**	**48**	**40**	**37**	**39**	**31**	**40**	**43**	**35**

APPENDIX 7-1

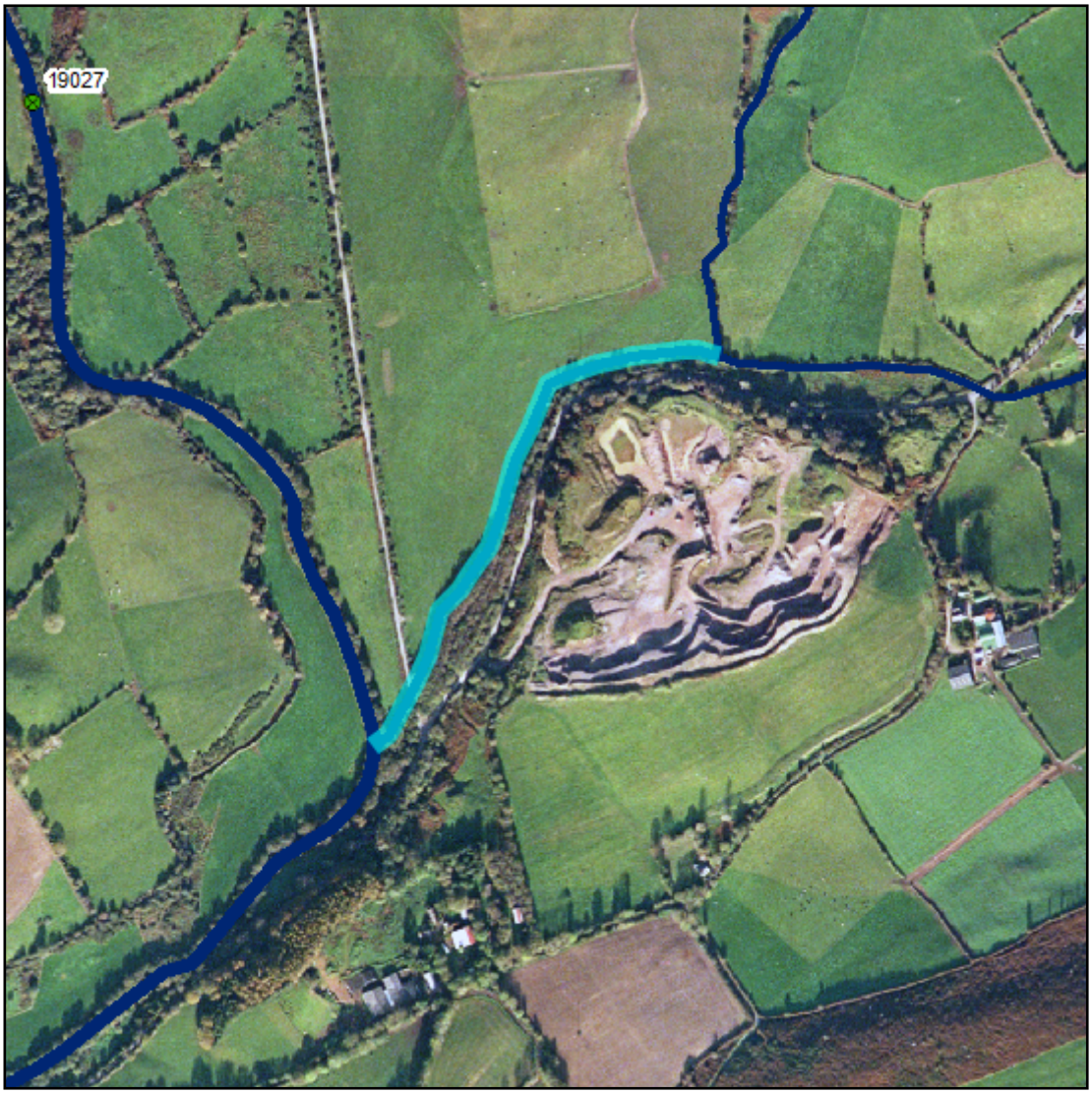
FLOW DURATION CURVE – CLASHAVOON (BEALICK) STREAM

Environmental Protection Agency

Estimation of Flow Duration Curve for Ungauged Catchment

River Name	BEALICK(19_906)
XY Location	136863,73855 (ING)

River Segment Map



Disclaimer
The source hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.

Disclaimer

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The user should familiarise himself/herself with the catchment being studied and confirm that the ungauged site is in a natural catchment where flows conditions are suitable for the use of the model.

It is strongly recommended that the user examine the catchment descriptors contained in the report produced and confirm that the percentages of the various constituent elements are comparable to a natural catchment.

If the flow in a catchment is not entirely natural, the estimation of flows using the model in these catchments could be affected due to:

- existence of local conduit karst within the catchment;
- the selected location itself is on local conduit karst;
- regulation of the river flow on the river channel (e.g. power station, sluice gates etc)
- impacts of abstractions upstream of the selected location or the impact of the discharge associated with the abstraction into the same/different catchment;
- estimates of flow being sought at locations effected by storage effects at, or near, lake outfalls;
- lack of similar catchments with observed flows, ie where catchment descriptors lie outside the range of available gauging station catchments (e.g. the catchment area is under 5 km²);
- any other special circumstances that may affect river flows.

Expert judgement will be required to ensure that the estimate of flow is not unduly affected by any of these influences.

Please note that the model does not provide estimates of flood peaks and, specifically, should not be used for that purpose.

The EPA has also prepared estimates of DWF and long term 95 percentile flows which are also presented on the EPA web site. These data are presented at http://www.epa.ie/whatwedo/monitoring/water/hydrometrics/data/

The data produced by the model for specific stations should be compared to the data contained in this file of DWF and long term 95percentile flows.

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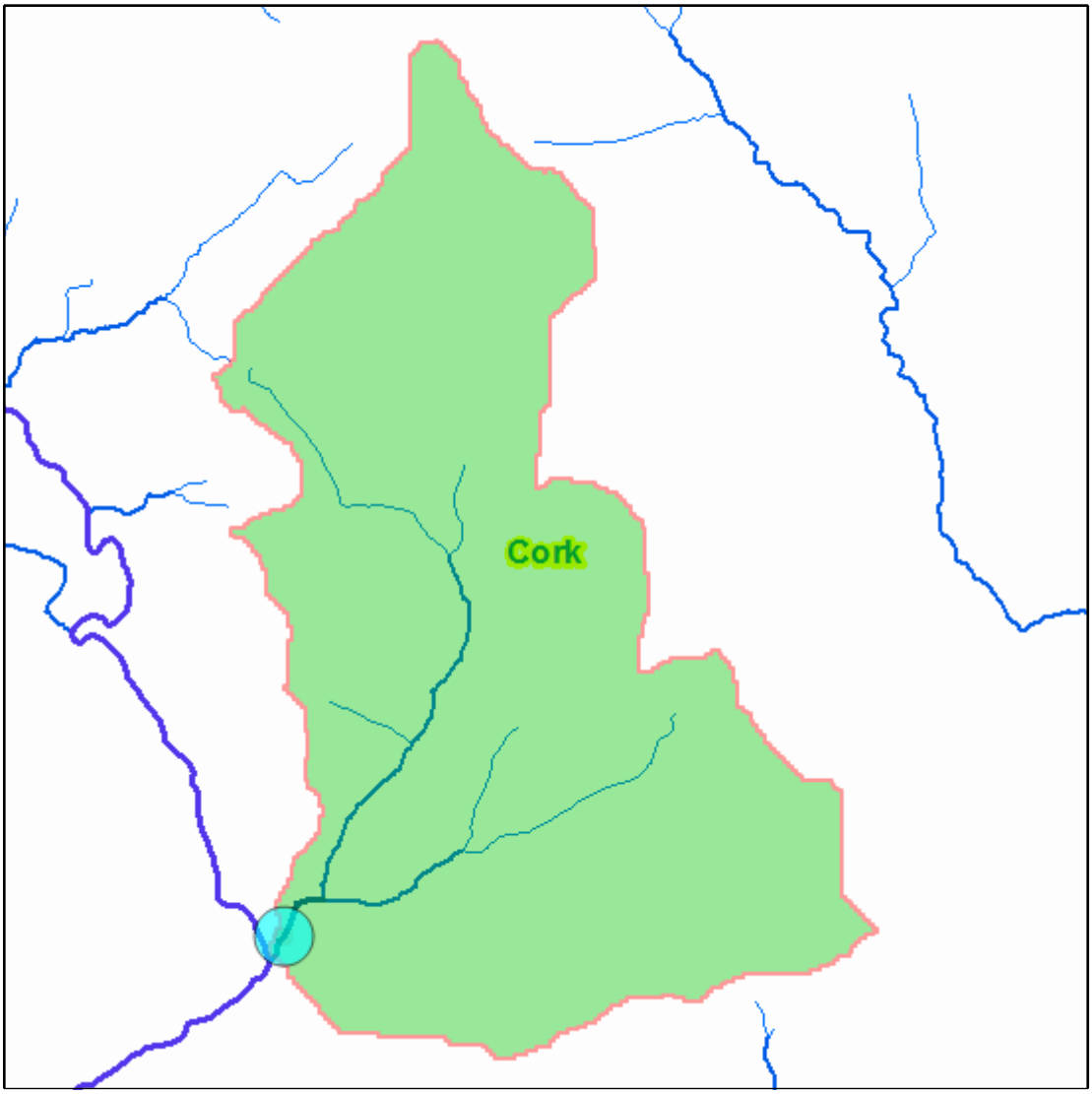
Environmental Protection Agency

Estimation of Flow Duration Curve for Ungauged Catchment

River Name	BEALICK(19_906)
XY Location	136863,73855 (ING)

Nested Catchment Map

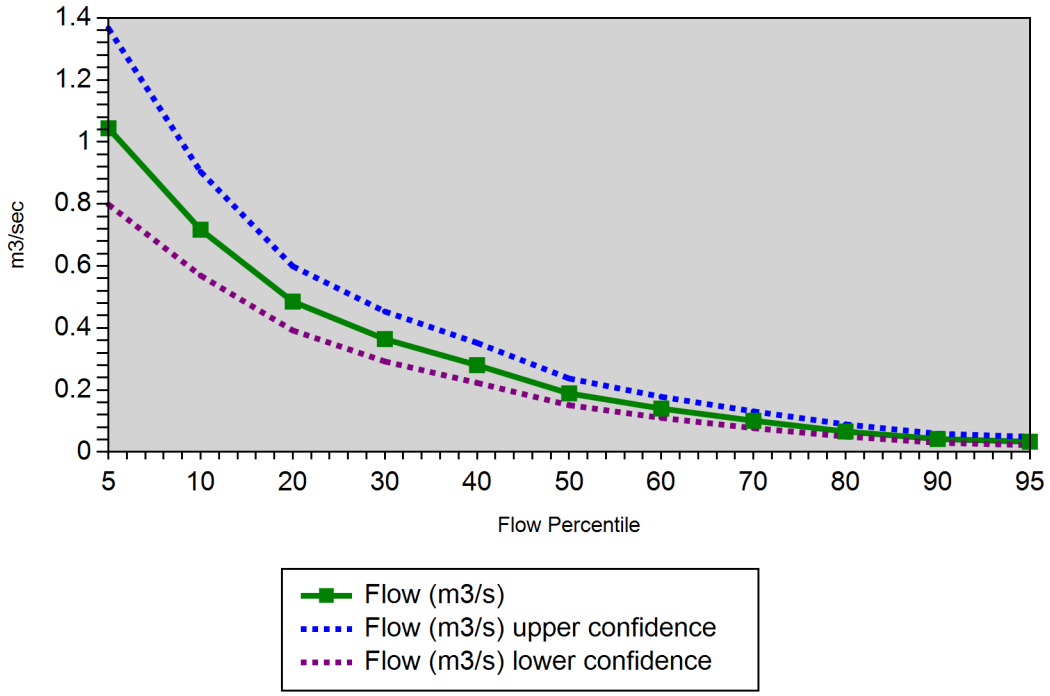


Disclaimer
The source hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.

Environmental Protection Agency

Estimation of Flow Duration Curve for Ungauged Catchment

Flow Duration Curve (Flow in m3/sec)



%ile	flow(m3/sec)	upper 95% confidence limit m3/sec	lower 95% confidence limit m3/sec
5	1.044	1.366	0.798
10	0.717	0.904	0.569
20	0.485	0.599	0.392
30	0.364	0.453	0.292
40	0.28	0.352	0.223
50	0.189	0.237	0.151
60	0.14	0.178	0.11
70	0.101	0.131	0.077
80	0.066	0.089	0.05
90	0.042	0.059	0.03
95	0.033	0.049	0.022

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Environmental Protection Agency

Estimation of Flow Duration Curve for Ungauged Catchment

Catchment Descriptors		
General		
Descriptor	**Unit**	**Value**
Area	sq km	11.2
Average Annual Rainfall (61-90)	mm/yr	1260
Stream Length	km	8.9
Drainage Density	Channel length (km)/catchment area (sqkm)	0.8
Slope	Percent Slope	8.4
FARL	Index (range 0:1)	1

Soil	
Code	**% of Catchment**
Poorly Drained	5.6
Well Drained	93.7
Alluvmin	0.5
Peat	0.3
Water	0
Made	0

Disclaimer
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Environmental Protection Agency

Estimation of Flow Duration Curve for Ungauged Catchment

Subsoil Permeability		
Code	**Explanation**	**% of Catchment**
H	High	0.7
M	Moderate	47.9
L	Low	0
ML	Moderate/Low	0
NA	No Subsoil/Bare Rock	51.4

Aquifer		
Code	**Explanation**	**% of Catchment**
LG_RG	LG:Locally important sand-gravel aquifer RG: Regionally important sand-gravel aquifer	0
LL	Locally important aquifer which is moderately productive only in local zones	99
LM_RF	LM: Locally important aquifer which is generally moderately productive RF: Regionally important fissured bedrock aquifer	0
PU_PL	PU: Poor aquifer which is generally unproductive PL: Poor aquifer which is generally unproductive except for local zones	1
RKC_RK	Regionally important karstified aquifer dominated by conduit flow	0
RKD_LK	Regionally important karstified aquifer dominated by diffuse flow	0

Stations in Pooling group			
%ile Flow	**Station 1**	**Station 2**	**Station 3**
5	19044	19032	23005
10	19044	19032	19009
20	19044	19032	19009
30	19044	19032	19009
40	19044	19032	19009
50	25038	19016	18001
60	25038	19016	18001
70	25038	19016	18001
80	25038	19009	18001
90	25038	19009	18001
95	25038	19009	18001

Disclaimer
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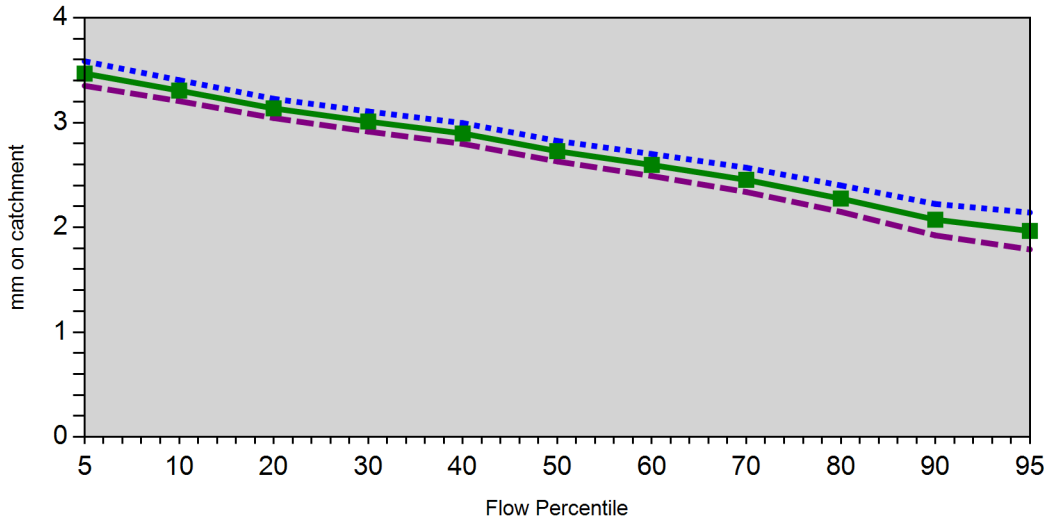
Environmental Protection Agency

Estimation of Flow Duration Curve for Ungauged Catchment

Flow Duration Curve (mm on catchment)



Log Flow (mm on catchment)			
%ile	mm	upper 95% confidence limit	lower 95% confidence limit
5	3.468	3.585	3.351
10	3.305	3.405	3.205
20	3.135	3.227	3.043
30	3.01	3.106	2.914
40	2.896	2.995	2.797
50	2.727	2.825	2.629
60	2.595	2.7	2.49
70	2.453	2.569	2.337
80	2.274	2.4	2.148
90	2.073	2.223	1.923
95	1.965	2.141	1.789

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APPENDIX 7-2

SURFACE WATER ANALYSIS – LABOATORY REPORTS

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www.enva.com

Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW1

Certificate No: 103404
Certificate Date: 18/07/2019
Sample Id: 1927068
Customer Order: Ummera
Page : 1 of 3
Date Received: 02/07/2019
Date Tested: 02/07/2019

Test	Result	Units	Method
Ammoniacal Nitrogen as NH3^	<0.2	mg/L	ENVCMX
Nitrate as Nitrogen	5.56	mg/L	ENVCM-015
Orthophosphate	<0.1	mg/L	ENVCM-18
Orthophosphate as PO4^	0.108	mg/L	ENVCMX
BOD^	<1	mg/L	ENVCMX
Total Suspended Solids	<2	mg/L	ENVCM-034

***= Not accredited. ^ = Subcontracted.**

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NOTE 2 : The above test results only apply to test item as described in sample description.
NOTE 3 : Results apply to the sample as received.

Signed:

Orla Dalton
Laboratory/Quality Manager

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW2

Certificate No: 103404
Certificate Date: 18/07/2019
Sample Id: 1927069
Customer Order: Ummera

Date Received: 02/07/2019
Date Tested: 02/07/2019

Test	Result	Units	Method
Ammoniacal Nitrogen as NH3^	<0.2	mg/L	ENVCMX
Nitrate as Nitrogen	5.56	mg/L	ENVCM-015
Orthophosphate	<0.1	mg/L	ENVCM-18
Orthophosphate as PO4^	<0.1	mg/L	ENVCMX
BOD^	<1	mg/L	ENVCMX
Total Suspended Solids	<2	mg/L	ENVCM-034

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW3

Certificate No: 103404
Certificate Date: 18/07/2019
Sample Id: 1927070
Customer Order: Ummera
Page : 3 of 3
Date Received: 02/07/2019
Date Tested: 02/07/2019

Test	Result	Units	Method
Ammoniacal Nitrogen as NH3^	<0.2	mg/L	ENVCMX
Nitrate as Nitrogen	2.4	mg/L	ENVCM-015
Orthophosphate	<0.02	mg/L	ENVCM-18
Orthophosphate as PO4^	<0.1	mg/L	ENVCMX
BOD^	<1	mg/L	ENVCMX
Total Suspended Solids	<2	mg/L	ENVCM-034

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www.enva.com

Certificate of Analysis

Customer: Enva Chemistry Laboratory
Raffeen Industrial Estate
Ringaskiddy Road
Monkstown
Co. Cork

Condition: Normal
Description: SW1 Ummera Pit

Certificate No: 103251
Certificate Date: 14/06/2019
Sample Id: 1922163
Customer Order: FAO AS KEO027
Page : 4 of 9
Date Received: 30/05/2019
Date Tested: 30/05/2019

Test	Result	Units	Method
Ammonia as N	<0.2	mg/L	ENVCM-115
Nitrate as Nitrogen	5.1	mg/L	ENVCM-015
Nitrite as Nitrogen*	0.008	mg/L	ENVCM-014
Orthophosphate	<0.1	mg/L	ENVCM-18
Biochemical Oxygen Demand	<4	mg/L	ENVCM-031
Dissolved Oxygen*	10.05	mg/L	ENVCM-88
Total Suspended Solids	<10	mg/L	ENVCM-034
pH @ 25deg C	7.41	pH Units	ENVCM-023
Total Nitrogen*	5.55	mg/L	ENVCM-016
Total Phosphorous	<0.1	mg/L	ENVCM-019

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Signed:

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Laboratory/Quality Manager

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www.enva.com

Certificate of Analysis

Customer: Enva Chemistry Laboratory
Raffeen Industrial Estate
Ringaskiddy Road
Monkstown
Co. Cork

Condition: Normal
Description: SW2 Ummera Pit

Certificate No: 103251
Certificate Date: 14/06/2019
Sample Id: 1922164
Customer Order: FAO AS KEO027
Page : 5 of 9
Date Received: 30/05/2019
Date Tested: 30/05/2019

Test	Result	Units	Method
Ammonia as N	<0.2	mg/L	ENVCM-115
Nitrate as Nitrogen	5.2	mg/L	ENVCM-015
Nitrite as Nitrogen*	0.002	mg/L	ENVCM-014
Orthophosphate	<0.1	mg/L	ENVCM-18
Biochemical Oxygen Demand	<4	mg/L	ENVCM-031
Dissolved Oxygen*	10.22	mg/L	ENVCM-88
Total Suspended Solids	18	mg/L	ENVCM-034
pH @ 25deg C	7.2	pH Units	ENVCM-023
Total Nitrogen*	5.69	mg/L	ENVCM-016
Total Phosphorous	<0.1	mg/L	ENVCM-019

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Certificate of Analysis

Customer: Enva Chemistry Laboratory
Raffeen Industrial Estate
Ringaskiddy Road
Monkstown
Co. Cork

Condition: Normal
Description: SW3 Ummera Pit

Certificate No: 103251
Certificate Date: 14/06/2019
Sample Id: 1922165
Customer Order: FAO AS KEO027
Page : 6 of 9
Date Received: 30/05/2019
Date Tested: 30/05/2019

Test	Result	Units	Method
Ammonia as N	<0.2	mg/L	ENVCM-115
Nitrate as Nitrogen	2.3	mg/L	ENVCM-015
Nitrite as Nitrogen*	0.003	mg/L	ENVCM-014
Orthophosphate	<0.1	mg/L	ENVCM-18
Biochemical Oxygen Demand	<4	mg/L	ENVCM-031
Dissolved Oxygen*	10.27	mg/L	ENVCM-88
Total Suspended Solids	16	mg/L	ENVCM-034
pH @ 25deg C	7.38	pH Units	ENVCM-023
Total Nitrogen*	2.88	mg/L	ENVCM-016
Total Phosphorous	<0.1	mg/L	ENVCM-019

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW1

Certificate No: 103934
Certificate Date: 26/11/2019
Sample Id: 1945077
Customer Order: Ummera Pit
Page : 1 of 9
Date Received: 05/11/2019
Date Tested: 05/11/2019

Test	Result	Units	Method
Total Suspended Solids^	<2	mg/L	ENVCMX
Ammoniacal Nitrogen as NH3^	<0.2	mg/L	ENVCMX
Total Phosphorous*^	0.0556	mg/L	ENVCMX
BOD^	1.15	mg/L	ENVCMX
Nitrate ^	3.63	mg/L	ENVCMX
Nitrate as NO3^	16.1	mg/L	ENVCMX
Nitrite ^	0.017	mg/L	ENVCMX
Nitrite as NO2^	0.056	mg/L	ENVCMX
Total Nitrogen^	4.03	mg/L	ENVCMX
Dissolved Oxygen^	10.6	mg/L	ENVCMX

***= Not accredited. ^ = Subcontracted.**

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Laboratory/Quality Manager

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW1

Certificate No: 103934
Certificate Date: 26/11/2019
Sample Id: 1945077
Customer Order: Ummera Pit
Page : 2 of 9
Date Received: 05/11/2019
Date Tested: 05/11/2019

Test	Result	Units	Method
pH ^	7.67	pH Units	ENVCMX
Ortho Phosphate	0.0294	mg/L	ENVCMX

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Orla Dalton
Laboratory/Quality Manager

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Raffeen Industrial Estate
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Tel: 021 4387200
Fax: 021 4387299
Email: cork@enva.com
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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW2

Certificate No: 103934
Certificate Date: 26/11/2019
Sample Id: 1945078
Customer Order: Ummera Pit
Page : 3 of 9
Date Received: 05/11/2019
Date Tested: 05/11/2019

Test	Result	Units	Method
Total Suspended Solids^	<2	mg/L	ENVCMX
Ammoniacal Nitrogen as NH3^	<0.2	mg/L	ENVCMX
Total Phosphorous*^	0.0574	mg/L	ENVCMX
BOD^	1.18	mg/L	ENVCMX
Nitrate ^	3.77	mg/L	ENVCMX
Nitrate as NO3^	16.7	mg/L	ENVCMX
Nitrite ^	0.0173	mg/L	ENVCMX
Nitrite as NO2^	0.057	mg/L	ENVCMX
Total Nitrogen^	4.15	mg/L	ENVCMX
Dissolved Oxygen^	10.9	mg/L	ENVCMX

***= Not accredited. ^ = Subcontracted.**

NOTE 1 : All analysis carried out based on "Standard Methods for the Examination of Water and Wastewater" 23rd edition (APHA, AWWA, WEF) or associated BS Standard.
NOTE 2 : The above test results only apply to test item as described in sample description.
NOTE 3 : Results apply to the sample as received.

Signed:

Orla Dalton
Laboratory/Quality Manager

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Certificate No: 103934
Certificate Date: 26/11/2019
Sample Id: 1945078
Customer Order: Ummera Pit
Page : 4 of 9
Date Received: 05/11/2019
Date Tested: 05/11/2019

Test	Result	Units	Method
pH ^	7.68	pH Units	ENVCMX
Ortho Phosphate	0.03	mg/L	ENVCMX

***= Not accredited. ^ = Subcontracted.**

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Certificate of Analysis

Customer: Dan Keohane
Keohane Geological & Environmental Consultancy
Ivy House
Clash
Carrigrohane
Co. Cork

Condition: Normal
Description: SW3

Certificate No: 103934
Certificate Date: 26/11/2019
Sample Id: 1945079
Customer Order: Ummera Pit
Page : 5 of 9
Date Received: 05/11/2019
Date Tested: 05/11/2019

Test	Result	Units	Method
Total Suspended Solids^	2.45	mg/L	ENVCMX
Ammoniacal Nitrogen as NH3^	<0.2	mg/L	ENVCMX
Total Phosphorous*^	0.0393	mg/L	ENVCMX
BOD^	1.4	mg/L	ENVCMX
Nitrate ^	2.41	mg/L	ENVCMX
Nitrate as NO3^	10.7	mg/L	ENVCMX
Nitrite ^	<0.0152	mg/L	ENVCMX
Nitrite as NO2^	<0.05	mg/L	ENVCMX
Total Nitrogen^	2.62	mg/L	ENVCMX
Dissolved Oxygen^	10.6	mg/L	ENVCMX

***= Not accredited. ^ = Subcontracted.**

NOTE 1 : All analysis carried out based on "Standard Methods for the Examination of Water and Wastewater" 23rd edition (APHA, AWWA, WEF) or associated BS Standard.
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Condition: Normal
Description: SW3

Certificate No: 103934
Certificate Date: 26/11/2019
Sample Id: 1945079
Customer Order: Ummera Pit
Page : 6 of 9
Date Received: 05/11/2019
Date Tested: 05/11/2019

Test	Result	Units	Method
pH ^	7.43	pH Units	ENVCMX
Ortho Phosphate	<0.02	mg/L	ENVCMX

***= Not accredited. ^ = Subcontracted.**

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APPENDIX 9-1

RECORDED MONUMENTS IN STUDY AREA

Appendix 9-1: Recorded Monuments in the Study Area

CO071-009---- KILL Ritual site - holy well

Not shown on 1842 and 1901 OS 6-inch maps. In pasture, c. 65m WNW of bullaun stone (CO071-010----). Stone-lined well, now dry; covering capstone lies beside it. Not in holy use.

CO071-010---- KILL Bullaun stone

In pasture, c. 65m to ESE of holy well (CO071-009----). Rectangular stone (0.69m x 0.73m) with circular hollow (diam. 0.26m) on top. Believed locally to cure warts.

CO071-018001- BEALICK Kiln – lime

On S side of road, built in natural hollow against rocky break in slope. Rectangular structure (8m x 4m; front H 5.4m; rear H 0.4m). Front elevation (N) has arched recess (H 2m; Wth 1.65m; D 2m) with lower inner arch and sloping slabs to rear. Front wall has shallow horizontal ledge 0.4m above top of arch recess. Circular funnel (diam. 1.85m); top of kiln heavily overgrown. Shown on 1842 OS 6-inch map.

CO071-018002- Cist

Shown only on 1938 OS 6-inch map as 'Ancient Burial (site of)'. Examined by Windle (1912, 169-72), who found small stone-lined grave containing fragments of encrusted urn, food vessel and human bones. Excavation by O'Kelly (1944, 116-21) revealed rectangular stone-lined cist (L c. 0.5m; Wth c. 0.4m; D c. 0.43m), covered by flat slab (c. 0.91m square); floor unpaved. Contents of cist re-examined by O'Kelly and further fragments of urn and food vessel recovered as well as 'a small quantity of finely comminuted' cremated bone (ibid., 118). Encrusted urn (H 0.27m; diam. base 0.10m; rim 0.31m) 'of the usual encrusted type - narrow bands of clay applied to the surface of the finished pot before firing. The encrustations are decorated with incised lines to give a herring-bone effect; inside the rim is also decorated. About one third of food vessel recovered (H c. 0.12m); mainly red-brown in colour and decorated with bands of 'oblique lightly-scored lines arranged in a broad herring-bone pattern'; the rim is decorated internally also. Windle's examination of the bones suggested that 'the interment was that of a female'. Following excavation, cist was reconstructed above ground slightly forward of its original position, where covering slab can still be seen.

CO071-019 ---- BEALICK Standing stone

Not shown on 1842 and 1904 OS 6-inch maps. In pasture, atop hill. Stone (H 1.2m; 1.86m x 1.1m) is subrectangular in plan, long axis N-S. Probably natural feature.

CO071-020---- BEALICK Megalithic tomb - wedge tomb

On W-facing slope of River Laney valley. Well-preserved gallery (L c. 2m; Wth 1.05m to W, 1.25m to E) aligned WNW-ESE; represented by two sidestones to N, one to S and backstone to E; single outer-wall stone to S. Two loose slabs at W end of S side. Gallery decreases in height from W to E; covered by single roofstone. No indications of surrounding mound.

CO071-026---- Fulacht fia SHANAKILL

In boggy ground, on S side of stream. Shown on 1938 OS 6-inch map as mound. Area inaccessible.

CO071-028---- COOLKISHA Standing stone

Not shown on 1842 and 1904 OS 6-inch maps. In pasture, on SW-facing slope. Stone (H 0.72m; 0.84m x 0.2m) is subrectangular in plan, long axis WNW-ESE.

CO071-030---- CURRAGHANEARLA Standing stone

Not shown on 1842 OS 6-inch map. In pasture, on NW-facing slope. Stone (H 1.5m; 1mx 0.7m) is subrectangular in plan, long axis ENE-WSW.

CO071-031---- CURRAGHANEARLA Fulacht fia

In reclaimed pasture, on S side of stream. Shown on 1938 OS 6-inch map as kidney-shaped mound. No visible surface trace.

CO071-056001- UMMERA Souterrain

Two entrances to souterrains (c. 10m apart) recorded by Hartnett (1939, 108), who noted that chambers are 'excavated in the sub-soil and have collapsed internally thus making them impossible to examine'. Openings still visible; inaccessible.

CO071-056002- UMMERA Souterrain

Two entrances to souterrains (c. 10m apart) recorded by Hartnett (1939, 108), who noted that chambers are 'excavated in the sub-soil and have collapsed internally thus making them impossible to examine'. Openings still visible; inaccessible.

CO071-057---- UMMERA Standing stone

In pasture, on S-facing slope. Stone (H 1.25m; 0.89m x 0.2m) is subrectangular in plan, long axis WNW-ESE.

CO071-058---- UMMERA Fulacht fia

On E side of stream, in sand and gravel works. Shown on 1938 OS 6-inch map as circular mound. No visible surface trace.

CO071-059001- UMMERA Ringfort – rath

In pasture. Arc of hachures SE->SW depict bank on 1938 OS 6-inch map, broken line SW->SE completes circle enclosing oval area. Circular, slightly raised area (diam. 23m) enclosed by low earthen bank in parts (int. H 0.3m; ext. H 0.4m). According to local information, known as the fort field. Fulacht fiadh (CO071-059002-) c. 20m to SE of enclosure.

CO071-059002- UMMERA Fulacht fia

In pasture, immediately SE of levelled circular enclosure (CO071-05901-). Partially overgrown horseshoe-shaped mound of burnt material (L 6.2m; Wth 5.8m; H 0.5m); opening (Wth 4.2m) faces WSW.

CO071-099001- COOLKISHA Redundant record

Roadside. Adjacent features marked 'Dolmen' and 'Dolmen (site of)' only on 1938 OS 6-inch map. Described by Megalithic Survey as 'two boulders incorporated into a roadside fence' and 'a slab, 1.50m in maximum dimension, forming a bridge across a roadside ditch'; now no trace of either feature.

CO071-099002- COOLKISHA Redundant record

Listed as a 'non-antiquity' in the SMR (1988) and the RMP (1998). As a non-antiquity this feature does not constitute an archaeological monument.

APPENDIX 10-1

BAT ACTIVITY SURVEY REPORT

BAT ACTIVITY SURVEY AT UMMERAGRAVEL PIT, MACROOM, CO. CORK

Report Prepared for

Atkins,

Cork Airport Business Park

Cork

By

Caroline Shiel B.Sc., Ph.D.

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27th June 2019

INTRODUCTION

I was contracted by Atkins to conduct a bat activity survey at Ummera Gravel Pit, near Macroom, Co. Cork.

Ummera Gravel Pit is a located in the rural townland of Ummera, approximately 2.5km north-east of Macroom. Bat surveys have been requested to include in substitute consent and Section 37L further development applications.

AIMS OF BAT SURVEY

(a) To determine the importance of the site for bats.

(b) To assess the impact of existing and any further extension works on bats using the site.

(c) To make recommendations in order to reduce the impact of any existing or extension works on bats using the site.

BAT SPECIES

Bats belong to the Order Chiroptera and to date nine species are recorded as resident in Ireland. These nine species are divided into two families – Family Vespertilionidae which contain nine of our Irish species (Daubenton's bat *Myotis daubentonii*, Natterer's bat *Myotis nattereri*, Whiskered bat *Myotis mystacinus*, Leisler's bat *Nyctalus leisleri*, Long-eared bat *Plecotus auritus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Common Pipistrelle *Pipistrellus pipistrellus* and Nathusius's Pipistrelle *Pipistrellus nathusii*) and one species in the family Rhinolophidae –the Lesser Horseshoe bat *Rhinolophus hipposideros.*

Brandt's bat *Myotis brandtii* has only been recorded once in Ireland from a site in Co. Wicklow and is classified as a vagrant. In 2013 a single male Greater horseshoe bat *Rhinolophus ferrumequinum* was recorded in Co. Wexford. This bat was also considered to be a vagrant.

Any of the nine resident species of bats could potentially be recorded on site, as Ummera is within the distribution range for all nine species.

Legislation

The serious decline in bat populations both in Ireland and across Europe has led to conservation measures and appropriate legislation being drawn up and implemented in an attempt to stabilise population numbers. It is estimated that bat populations across Europe have decreased by up to 60% in the last 30 years. As they are highly specialised animals, bats serve as biological indicators and are often amongst the first animal species to show signs of population change due to the activities of man. Destruction of roosts and foraging areas, coupled with the widespread use of pesticides, are the key reasons for the decline in numbers of bats in Ireland. Efforts should be made to retain known bat colonies and methods to lessen disturbance to these animals should be incorporated into any development.

Bats' dependency on insects has left them vulnerable to habitat destruction, land drainage, agricultural intensification and increased use of pesticides. Their reliance on buildings has also made them vulnerable to building repairs and the use of chemicals for timber treatment.

Roosting or hibernation sites in caves, mines, trees and disused buildings are also often lost to development.

Irish Legislation

Wildlife Act 1976 – In the Republic of Ireland, under Schedule 5 of the Wildlife Act 1976 all bats and their roosts are protected by law. It is an offence to disturb either without the appropriate licence. This Act was further strengthened by the Wildlife Amendment Act 2000.

E.U. Legislation

Under the Habitats Directive 1992 (EEC 92/43), each member state of the E.U. was requested to identify habitats of national importance and priority species of flora and fauna. These habitats are now designated as Special Areas of Conservation (SAC). In Ireland, all bat species, except one are classified as Annex IV species under the Habitats Directive. Annex IV species are species in need of strict protection. The exception is the Lesser Horseshoe bat which is an Annex II species (Priority Species). Annex II species are species requiring the designation of Special Areas of Conservation specifically for their protection.

All species of bat in Ireland are strictly protected under the Habitats Directive to include deliberate disturbance of these species, particularly during the periods of breeding, rearing and hibernation. It also specifies deterioration or destruction of breeding or resting places.

International Legislation

Ireland has ratified two international wildlife laws pertaining to bats

(a) The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention, 1982) – part of this convention stipulates that all bat species and their habitats are to be conserved.
(b) The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention 1979, Enacted 1983). This was instigated to protect migrant species across all European boundaries.

DATA SEARCH

A search of Bat Conservation Ireland's database was conducted to establish what bat roosts are known in vicinity of Ummera. The mid-point of the site was taken as W370 738.

There are no known bat roosts listed within 1km of Ummera Gravel Pit.

When the search is extended to 10km from Ummera Gravel Pit there is a total of 48 roosts listed. However, the vast majority of these records date from 2000/2001. The most recent

records are from 2007; i.e. 12 years ago. Of the 48 roosts listed only 24 were confirmed roosts with more than one bat. Many of the other records were for bat droppings only recorded but no bats present. Other records also represent bats flying in the vicinity of a property but not recorded roosting on site.

Roosts within 10km Of Ummera Gravel Pit

- Private Residence – W44094 89553 - Rylane, Co. Cork (2007). 12 Common pipistrelles
- Bridelands House – W427 668 – Inchrahilly, Crookestown, Co. Cork (2001). Approx. 40 Soprano pipistrelles + unspecified no. of Brown long-eared bats
- Derelict Cottage – W343 661 – Ardaneneen, Kilmurray, Co. Cork (2000/2001). 6 Brown long-eared bats + 1 Lesser horseshoe bat
- Dromleigh National School - W284 653 – Dromleigh, Kilmichael, Macroom (2000). Large quantity of Soprano pipistrelle droppings – Maternity roost
- Farm Buildings – W289 764 – Gortnalicky, Clonfrohid, Macroom (2001). 6 Brown long-eared bats
- Private Residence – W339 730 - New Road, Macroom (1999). 300+ Soprano pipistrelles
- Private Residence – W337 732 – Masseytown Road, Macroom (1999). 210 Soprano pipistrelles
- Private Residence – W360 675 – Teereeven, Kilmurray, Macroom (1999) 200+ Soprano pipistrelles
- Inchaleagh Farm Building W399753 – Bealnamorive, (2001) 5 Soprano pipistrelles
- Inchaleagh House – W399753 – Bealnamorive, (2001) 30+ Soprano pipistrelles
- Killinardrish House – W417 723 – Carrigadrohid, Macroom (2001). Large quantity of Soprano pipistrelle droppings
- Killinardrish Old Barracks – W415 723 – Carrigadrohid, Macroom (2001). 1500+ Soprano pipistrelle roost
- Linnamilla Bridge – W313 728 – Raleigh North, Macroom (2000). 2 Daubenton's bats
- Ballymichael Bridge - W390 670 - Kilmurray Macroom (2000/2004) 7/2 Daubenton's bats
- Nettleville Demense Farmhouse – W431 725 – Carrigagulla, Co. Cork (2001). 10 Whiskered bats, 1 Soprano pipistrelle + 1 Brown Long-eared
- Oakgrove Estate Barn - W425 735 - Carrigadrohid, (2001) 10 Soprano pipistrelle + Brown long-eared droppings
- Prospect House - W404 725 - Carrigadrohid (2001) 30 Common pipistrelles
- Rockgrove House Outbuilding - W439 747 - Coachford, Co. Cork (2001/2008) 20 Whiskered, large amount of Brown long-eared droppings
- Ruin Nettleville House - W431 725 - Carrigagulla, Co. Cork (2000). 5 bats – either Daubentons or Brown long-eared
- Ruined Cottage Annahalla – W30132 69920 - Annahalla, Kilmichael (2007) 11 Lesser Horseshoe bats
- Two storey Stable - W318 704 - Annahalla East, The Gearagh, Macroom (1999) c. 10 Leisler's bats

- Stables St Olans Lodge - W436 754 - Beacnamarbh, Co. Cork (2001) c. 10 Brown long-eared bats
- The Lodge Warrencourt - W377 668 - Kilmurray, Macroom (1999) 100+ Soprano pipistrelles
- Wood Cabin - W381 827 - Carrigagukka, Ballinagree, Macroom (2004) 5 Common pipistrelles

SITE VISIT

Ummera Gravel Pit was visited during daylight hours on 27th June 2019 to familiarise surveyors with the layout of the site and any Health and Safety issues to be aware of prior to the night time survey.

Ummera Gravel Pit is situated in the townland of Ummera, approximately 2.5 km north-east of Macroom town, Co. Cork. The gravel pit site lies directly to the east of the River Lainey which flows in a south west direction past the gravel pit before joining The River Sullane approximately 2 km downstream just below Laney Bridge. The Clashavoon Stream, a tributary of the Laney River forms the western and northern landownership boundary.

Ummera Gravel Pit is enclosed by two local roads which circle most of the perimeter of the site (Figure 1).

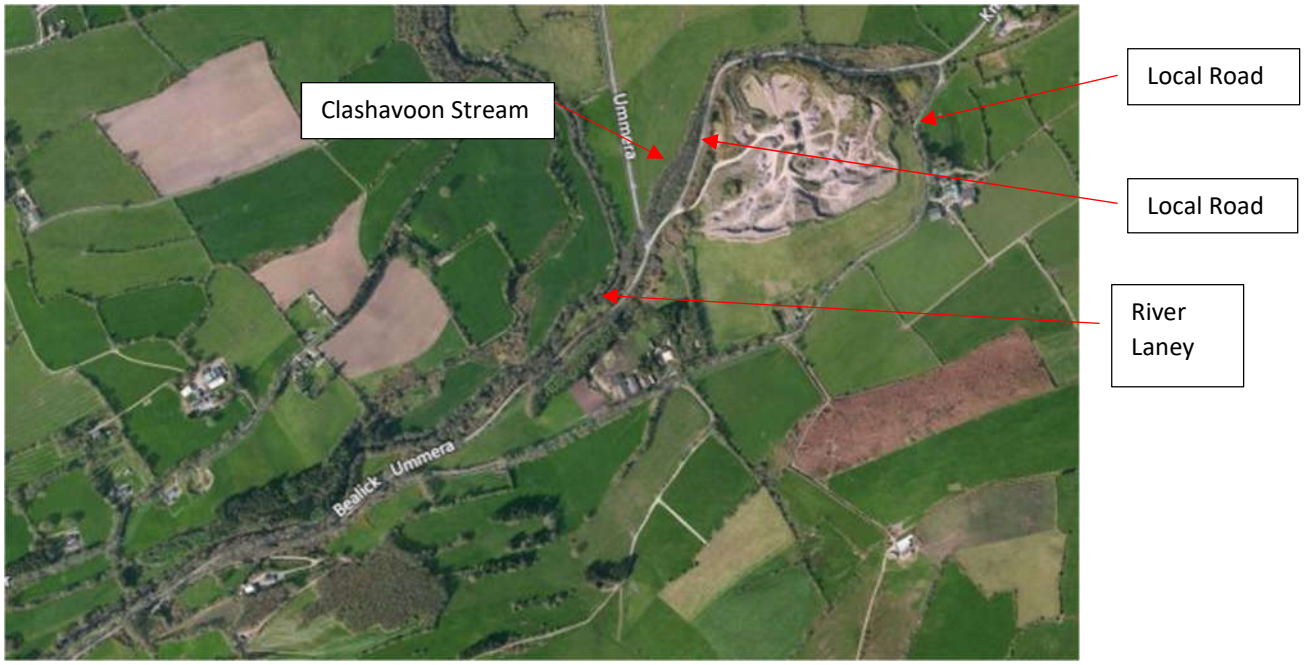

Figure 1 – Aerial View of Ummera Gravel Pit showing location of River Laney.

During daylight hours on 27th June 2019 two Songmeter 4 bat detectors were set up on site to remotely monitor bat activity at two locations overnight. The position of the Songmeters is

illustrated in Figure 2. These units were programmed to run from 20mins before sunset to 20 mins after sunset.

The first Songmeter was placed on an earthen bank at the settlement pond at the northern end of the site (Photo 3). Figure 2 shows two settlement ponds but on the date of the survey there was water in the easternmost pond only. The western pond was dry.

The second location selected was on a track in the centre of the site (Photo 5). This track was lined with immature scrub willow.

Figure 2 – Aerial view of Ummera Gravel Pit showing position of the two Songmeter 4 detectors (red star) placed on site overnight.

METHODOLOGY

Two remote bat detectors were placed at separate locations on site to record bat activity overnight. These locations were selected during the day time visit and Songmeters were put in position at this time.

The site was assessed to select suitable areas for dusk and dawn surveys. There is a mature treeline of deciduous trees on the south western boundary of the site. This tree line was selected to be surveyed with bat detectors in the dawn period the following morning.

The only buildings on site are a small metal container used as a site office and a tool shed/store room. Derelict farm buildings are located at the south-western corner of the landholding, adjacent to the mature tree line; these are outside the quarry site boundary.

On the night of 27th June 2019, two surveyors conducted emergence surveys at dusk, followed by walked transects of the site. Dawn surveys were conducted on the morning of 28th June 2019 to record any bats returning to roosts prior to sunrise. Equipment used included a Pettersson D240X time expansion bat detector, a Pettersson D200 heterodyne detector and an Echometer Touch Pro detector plugged into an iPad.

Dusk Survey

Date: 27.06.19

Sunset = 21.57

Temp = 16 C

Weather = light breeze, dry, 60% cloud cover

One surveyor conducted an emergence watch at the site office. The second surveyor conducted an emergence survey at the southern edge of the extraction area to investigate if bats were commuting from the farm buildings on the local road immediately to the south of the quarry. The dusk surveys commenced 20 mins before sunset and lasted 1.5 hours.

Results: No bats emerged from the site office. No bats were recorded commuting from the farm buildings on the local road on the southern boundary of the site.

Transects

Walking transects with hand held bat detectors were commenced immediately after completing the emergence surveys. Common pipistrelles were recorded intermittently foraging on the access track from the local road and in the vicinity of the settlement pond. No bats were recorded foraging within the extraction area.

Several Soprano and Common pipistrelles were recorded over the grass field to the south of the extraction area and along the mature treeline on the south-western boundary of the site.

Dawn Survey

Sunrise = 05.17

Temperature = 13 C

Weather = Overcast, calm & intermittent light drizzle

The dawn survey commenced 1.5 hours before sunrise. Low levels of foraging activity of both Soprano and Common pipistrelles were recorded along the mature tree line. No swarming was detected and no bats returned to roost in the trees prior to sunrise.

Results of Songmeter recordings

<u>Songmeter at Settlement pond</u> – Total no. of calls = 142 calls

48.6% Common pipistrelle, 23.2% Soprano pipistrelle, 11.3% Brown long-eared, 9.8% Leisler's, 7% Whiskered/Daubenton's

<u>Songmeter on Track</u>– Total number of calls = 32

65.63% Common pipistrelle, 31.25% Leisler's, 3.13% Soprano pipistrelle

Common pipistrelles were the most frequently recorded species at both sites. 5 species were detected at the settlement pond but overall activity levels were low. The close proximity of the River Laney and Clashavoon Stream running close to the western and northern boundary of the site most likely resulted in elevated levels of bats at the settlement pond. On the date of the survey, the settlement pond was very silty, no insects were visible and foraging conditions for bats looked poor.

CONCLUSIONS

Relatively low levels of overnight bat activity were recorded on the Songmeter placed at the settlement pond on site and very low levels of bat activity at the central location in the extraction area. Ummera extraction is not an important foraging site for bats.

No bat roosts were recorded on site.

There are excellent foraging sites for bats along the route of the River Laney and the Clashavoon Stream very close to the western and northern boundary of the site. These watercourses have mature deciduous wood land along their banks.

PHOTOGRAPHS

Photo 1 – washing & screening machinery on site.

Photo 2 – Settlement pond at northern end of site.

Photo 3 – Songmeter 4 in position on earthen bank at settlement pond (GPS 37044 73946).

Photo 4 – Westernmost settlement pond dry on date of survey.

Photo 5 – Central track where Songmeter was placed overnight (GPS 37100 73802).

Photo 6 – working area of gravel pit.

Photo 7 – South western end of site looking towards mature tree line.

Photo 8 – Grass field to south of working area.

Photo 9 – Deciduous treeline on south western boundary of gravel pit.

Photo 10 – local road to south of site.