Appendices

Appendix I – An Bord Pleanála Leave to Apply Order

Our Ref: LS19.LS0033
P.A.Reg.Ref:
Your Ref: Dermot Nally Stone Ltd

An Bord Pleanála

William Smyth
114 Wesbury
Stillorgan
Co. Dublin

9 JAN 2019

Appeal **Re:** Quarry.
Clonfinlough, Co. Offaly.

Dear Sir/Madam,

An order has been made by An Bord Pleanála determining the above-mentioned matter under the Planning and Development Acts 2000 to 2017. A copy of the Order and a copy of the Board Direction is enclosed.

The effect of this order is to direct you to make an application to the Board for substitute consent not later than 12 weeks after the date of the giving of the Board's decision (or such further period as the Board may allow). The application shall be accompanied by a remedial Environmental Impact Assessment Report and a remedial Natura impact statement. The application shall be in respect of the entire quarry of 15.34 hectares, and shall relate only to the quarrying development that has taken place since the 1st day of January, 2010, and shall not include any proposed further quarrying.

Section 177E of the Planning and Development Acts 2000, as amended sets out the requirements for a valid substitute consent application and your attention is also drawn to Part 19 of the Planning and Development Regulations, 2001, as amended, which requires, inter alia, the applicant to submit to the Board a newspaper/site notice. You are requested to contact the Board at bord@pleanala.ie in relation to the wording of the public notice prior to publication of same, or any other matter concerning the making of the application. A fee is also payable to the Board in respect of the substitute consent application.

Separately, it would greatly assist the Board to have a soft copy of the entire application submitted with six hard copies. In this regard, the drawings on the soft copy should be in PDF format.

In accordance with section 146(5) of the Planning and Development Act 2000, as amended, the Board will make available for inspection and purchase at its offices the documents relating to any matter falling to be determined by it, within 3 days following the making of its decision. The documents referred to shall be made available for a period of 5 years, beginning on the day that they are required to be made available. In addition, the Board will also make available the Inspector's Report, the Board Direction and Board Order in respect of the matter on the Board's website (www.pleanala.ie). This information is normally made available on the list of decided cases on the website on the Wednesday following the week in which the decision is made.

Tel (01) 858 8100
LoCall 1890 275 175
Fax (01) 872 2684
Website www.pleanala.ie
Email bord@pleanala.ie

64 Marlborough Street
Dublin 1
D01 V902

The Public Access Service for the purpose of inspection/purchase of file documentation is available on weekdays from 9.15am to 5.30pm (including lunchtime) except on public holidays and other days on which the office of the Board is closed.

Yours faithfully,

B. Mc Manus

Brid McManus
Executive Officer
Encl:
BP 100Qn.ltr

An Bord Pleanála

Board Order
19.LS.0033

Planning and Development Acts 2000 to 2018

Planning Authority: Offaly County Council

Application for Leave To Apply For Substitute Consent, by Dermot Nally Stone Limited care of William Smyth of 114 Wesbury, Stillorgan, County Dublin.

Development: Quarry at Clonfinlough, County Offaly.

Decision

GRANT leave to apply for substitute consent under section 177D of the Planning and Development Act 2000, as amended, based on the reasons and considerations set out below.

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

Having regard to Section 177D, Planning and Development Act, 2000, as amended, the Board is satisfied that an environmental impact assessment and an appropriate assessment is required, in the light of the scale and nature of the quarrying that has been carried out.

Furthermore, the Board examined whether or not exceptional circumstances exist such that it would be appropriate to allow the opportunity for regularisation of the development by permitting leave to make an application for substitute consent.

In this regard the Board:

- considered that the regularisation of the development would not be likely to circumvent the purpose and objectives of the Environmental Impact Assessment Directive or of the Habitats Directive,

- considered that the applicant could not reasonably have had a belief that the quarrying development that took place after the 31st day of December, 2009 was not unauthorised, having regard to the terms and conditions of planning permission register reference number PL 2/03/191 (An Bord Pleanála reference number PL 19.205910).

- considered that the ability to carry out an assessment of the environmental impacts of the development for the purpose of an environmental impact assessment and to carry out an appropriate assessment, and for the public to participate in such assessments, has not been substantially impaired,

- considered the nature of the actual/likely significant effects on the environment or adverse effects on the integrity of a European site resulting from the carrying out of the development,

- considered that the applicant had carried out unauthorised development subsequent to the expiry of planning permission for quarrying on the 31st day of December, 2009,

- considered that the actual or likely significant effects on the environment, and likely significant effects on a European site resulting from the development could be remediated;

and the Board further considered the following relevant matter:-

- the fact that the applicant had a reasonable expectation, following the Section 261A process, that the development was capable of being regularised under a normal Section 34 application for retention, but that the planning authority's decision in this process did not provide for any means of regularising the quarrying development that has taken place since the 1st day of January, 2010.

Taking all of the above into consideration, it is considered that exceptional circumstances exist such that it would be appropriate to permit the opportunity for regularisation of the development by permitting an application for Substitute Consent.

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

Dated this 8th **day of** January **2019**

Appendix II – An Bord Pleanála Extension of Time Order

Our Ref: 19.LS.0033
Your Ref: Dermot Nally Stone Ltd

An Bord Pleanála

Earth Science Partnership (Ire) Ltd.
Tonranny,
Westport,
Co. Mayo

10 APR 2019

Re: Quarry.
Clonfinlough, Co. Offaly.

Dear Sir/Madam,

An order has been made by An Bord Pleanála determining the above-mentioned matter under the Planning and Development Acts 2000 to 2018. A copy of the order is enclosed.

Please note that the final day for the making of an application for substitute consent is the 22nd day of July, 2019.

In accordance with section 146(5) of the Planning and Development Act 2000, as amended, the Board will make available for inspection and purchase at its offices the documents relating to any matter falling to be determined by it, within 3 days following the making of its decision. The documents referred to shall be made available for a period of 5 years, beginning on the day that they are required to be made available. In addition, the Board will also make available the Inspector's Report, the Board Direction and Board Order in respect of the matter on the Board's website (www.pleanala.ie). This information is normally made available on the list of decided cases on the website on the Wednesday following the week in which the decision is made.

The Public Access Service for the purpose of inspection/purchase of file documentation is available on weekdays from 9.15am to 5.30pm (including lunchtime) except on public holidays and other days on which the office of the Board is closed.

A further enclosure contains information in relation to challenges by way of judicial review to the validity of a decision of An Bord Pleanála under the provisions of the Planning and Development Act, 2000, as amended.

Yours faithfully,

Miriam Baxter
Executive Officer
Encl:
BP 100n.ltr

Teil Tel (01) 858 8100
Glao Áitiúil LoCall 1890 275 175
Facs Fax (01) 872 2684
Láithreán Gréasáin Website www.pleanala.ie
Ríomhphost Email bord@pleanala.ie

64 Sráid Maoilbhríde
Baile Átha Cliath 1
D01 V902

64 Marlborough Street
Dublin 1
D01 V902

An Bord Pleanála

Board Order
19.LS.0033

Planning and Development Acts 2000 to 2018

Planning Authority: Offaly County Council

Application for an Extension of Time to Apply for Substitute Consent by Dermot Nally Stone Limited care of Earth Science Partnership (Ireland) Limited of Tonranny, Westport, County Mayo pursuant to the determination by An Bord Pleanála on the 8th day of January, 2019, requiring the owner/operator to apply to An Bord Pleanála for substitute consent.

Development: Quarry at Clonfinlough, County Offaly.

Decision

Grant an extension of the period for the making of an application for substitute consent under section 177E (4) of the Planning and Development Act, 2000, as inserted by section 57 of the Planning and Development (Amendment) Act 2010, for a Further Period of 16 WEEKS from the end of the original 12 week period that commenced on the 8th day of January, 2019, based on the reasons and considerations set out below.

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

The Board noted the request made for an extension of the period for the making of the application for substitute consent in this instance, and considered it appropriate that the further period should be 16 weeks from the end of the original 12 week period. In making this decision that Board had regard to the circumstances of the case, and the nature and scale of the operations, and was of the opinion that the extended period of 16 weeks would be adequate to prepare a comprehensive remedial Environmental Impact Report and remedial Natura Impact Statement in this instance.

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

Dated this 8th **day of** April **2019**

Fógra faoi Athbhreithniú Breithiúnach

An Bord Pleanála

Athbhreithniú breithiúnach ar chinneadh a rinne An Bord Pleanála faoi fhorálacha an Achta um Pleanáil agus Forbairt, 2000 (arna leasú)

Nuair is mian le duine agóid dhlíthiúil a chur in aghaidh cinnidh an Bhoird caithfear é sin a dhéanamh trí athbhreithniú breithiúnach amháin. Tá na forálacha chun agóid dhlíthiúil a chur in aghaidh cinnidh an Bhoird le fáil in ailt 50, 50A agus 50B san Acht um Pleanáil agus Forbairt, 2000 (arna ionadú le halt 13 den Acht um Pleanáil agus Forbairt (Bonneagar Straitéiseach) 2006, le hailt 32 agus 33 den Acht um Pleanáil agus Forbairt (leasú), 2010 agus le hailt 20 agus 21 den Acht Comhshaoil (Forálacha Ilghnéitheacha), 2011.)

Ní féidir ceistiú a dhéanamh in aghaidh cinnidh an Bhoird ach amháin trí iarratas ar athbhreithniú breithiúnach faoi Ordú 84 de Rialacha na nUaschúirteanna (I.R. Uimhir 15 de 1986). Faoi réir fho-alt 50(6) den Acht um Pleanáil agus Forbairt, 2000 déanfar iarratas ar chead chun iarratas a dhéanamh ar athbhreithniú breithiúnach laistigh den tréimhse 8 seachtain den dáta a rinne an Bord an cinneadh nó laistigh d'aon síneadh ama a cheadaíonn an Ard-Chúirt faoi fho-alt 50(8). Tabhair faoi deara nuair atá athbhreithniú breithiúnach i gceist faoi alt 50 nach féidir ach bailíocht an chinnidh a cheistiú agus ní thugann an Chúirt aon chinneadh faoi fhiúntas na forbartha ó thaobh prionsabail pleanála cuí nó forbairt inchothaithe na háite nó éifeachtaí ar an timpeallacht. Tá sé leagtha síos in alt 50 nach ndeonófar cead d'athbhreithniú breithiúnach muna bhfuil an Chúirt sásta go bhfuil forais shubstaintiúla ann chun argóint a dhéanamh go bhfuil an cinneadh neamhbhailí nó gur ceart é a neamhniú agus go bhfuil suim shásúil ag an iarratasóir leis an ábhar i gceist san iarratas nó i gcásanna a bhaineann le measúnacht tionchair timpeallachta gur eagraíocht í an t-iarratasóir a chomhlíonann coinníollacha áirithe.

Tá forálacha in alt 50B mar gheall ar chostais maidir le himeachtaí san Ard-Chúirt i dtaobh athbhreithniú breithiúnach i gcásanna áirithe (lena n-áirítear imeachtaí faoi chinntí nó gníomhartha de bhun dlí de chuid an Stáit lena dtugtar éifeacht do na forálacha faoi rannpháirtíocht an phobail agus rochtain ar an gceartas atá leagtha amach i dTreoir 85/337/CEE i.e. an Treoir faoi mheasúnacht tionchair timpeallachta agus na forálacha í dTreoir 2001/42/CE maidir le héifeachtaí pleananna agus clár áirithe ar an timpeallacht a mheasúnú). Is í an fhoráil ghinearálta in imeachtaí lena mbaineann alt 50B ná go n-íocfaidh gach páirtí a chostais féin. Is féidir leis an gCúirt costais a bhronnadh i gcoinne aon pháirtí i gcásanna áirithe. Chomh maith le sin tá forálacha i bhfeidhm ionas gur féidir leis an gCúirt iomlán a chostas nó cuid díobh a bhronnadh ar an iarratasóir, in aghaidh fhreagróra nó fhógrapáirtí i gcásanna ina bhfaightear faoiseamh mar gheall ar gníomhú nó neamhfheidhm an fhreagróra nó an fhógrapáirtí.

Tá eolas ginearálta faoi athbhreithniú breithiúnach le fáil ar an suíomh idirlín www.citzensinformation.ie.

Séanadh: Tá an t-eolas thuas tugtha mar threoirlíne. Ní éilítear gur léirmhíniú dlí faoi na forálacha ábhartha atá ann agus dá mbeadh sé ar intinn ag éinne cás dlí a thógáil in aghaidh an Bhoird bheadh sé inmholta comhairle dlí a fháil ar dtús. Athbhreithnithe 30/11/2011

Judicial Review Notice

An Bord Pleanála

Judicial review of An Bord Pleanála decisions under the provisions of the Planning and Development Act 2000 (as amended)

A person wishing to challenge the validity of a Board decision may do so by way of judicial review only. Sections 50, 50A and 50B of the Planning and Development Act 2000 (as substituted by section 13 of the Planning and Development (Strategic Infrastructure) Act 2006, as amended/substituted by sections 32 and 33 of the Planning and Development (Amendment) Act 2010 and as amended by sections 20 and 21 of the Environment (Miscellaneous Provisions) Act 2011) contain provisions in relation to challenges to the validity of a decision of the Board.

The validity of a decision taken by the Board may only be questioned by making an application for judicial review under Order 84 of The Rules of the Superior Courts (S.I. No. 15 of 1986). Sub-section 50(6) of the Planning and Development Act 2000 requires that subject to any extension to the time period which may be allowed by the High Court in accordance with subsection 50(8), any application for judicial review must be made within 8 weeks of the decision of the Board. It should be noted that any challenge taken under section 50 may question only the validity of the decision and the Courts do not adjudicate on the merits of the development from the perspectives of the proper planning and sustainable development of the area and/or effects on the environment. Section 50A states that leave for judicial review shall not be granted unless the Court is satisfied that there are substantial grounds for contending that the decision is invalid or ought to be quashed and that the applicant has a sufficient interest in the matter which is the subject of the application or in cases involving environmental impact assessment is a body complying with specified criteria.

Section 50B contains provisions in relation to the cost of judicial review proceedings in the High Court relating to specified types of development (including proceedings relating to decisions or actions pursuant to a law of the state that gives effect to the public participation and access to justice provisions of Council Directive 85/337/EEC i.e. the EIA Directive and to the provisions of Directive 2001/12/EC i.e. Directive on the assessment of the effects on the environment of certain plans and programmes). The general provision contained in section 50B is that in such cases each party shall bear its own costs. The Court however may award costs against any party in specified circumstances. There is also provision for the Court to award the costs of proceedings or a portion of such costs to an applicant against a respondent or notice party where relief is obtained to the extent that the action or omission of the respondent or notice party contributed to the relief being obtained.

General information on judicial review procedures is contained on the following website, www.citizensinformation.ie.

Disclaimer: The above is intended for information purposes. It does not purport to be a legally binding interpretation of the relevant provisions and it would be advisable for persons contemplating legal action to seek legal advice. Modified 30/11/2011

Appendix III – Clonmacnoise Esker Report

OFFALY - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	**Clonmacnoise Esker**
Other names used for site	The Ballinasloe-Split Hills-Clonmacnoise-Clara Esker System, The Clara Esker, The Pilgrim's Road, The Long Road, The *Eiscir Riada,* Lough Nanag Esker
IGH THEME	**IGH7 Quaternary**
TOWNLAND(S)	**Clorhane, Creevagh, Clonmacnoise, Clonascra, Ballyduff, Clonaderg, Doon Demesne, Esker, Togher, Corracullin, Cooldorragh, Cappanalosset, Cornafurrish and Corrabeg, Castletown, Ballybruncullin, Bohernagrisha, Erry, Kilnabinnia, Kilmucklin, Ashfield, Tara, Cartron, Durrow Demesne, Ballybought, Balleek, Ballycallaghan**
NEAREST TOWN/VILLAGE	**Clara, Ballycumber**
SIX INCH MAP NUMBER	**5, 6, 7, 8, 9**
ITM CO-ORDINATES	**600870E 730650N (centre of esker at Clonmacnoise)**
1:50,000 O.S. SHEET NUMBER	**47, 48 GSI BEDROCK 1:100,000 SHEET NO. 15**

Outline Site Description

The Clonmacnoise Esker and surrounding sands and gravels includes an exceptionally large accumulation of sands and gravels deposited both under the ice sheet and at its margin as the ice withdrew westwards across Offaly at the end of the last Ice Age.

The esker forms part of the larger Ballinasloe-Split Hills-Clonmacnoise-Clara Esker System, which extends from Galway, through Offaly, and into Westmeath, and is the traditional route defined as the '*Eiscir Riada*' in ancient Irish Folklore.

Geological System/Age and Primary Rock Type

The Clonmacnoise Esker and surrounding sands and gravels are formed entirely on Lower Carboniferous limestone rocks, across the lowlands of north Offaly. The eskers themselves are Quaternary in age, having been deposited either under or at the edge of the westward-retreating ice sheet in deglaciation, approximately 14,000 years ago.

Main Geological or Geomorphological Interest

The esker ridges are striking features, standing proud of the flat landscape of till (boulder clay) upon which they were deposited. In many places the eskers have been surrounded by post-glacial alluvium or peat deposits in the Holocene, following the Ice Age. This is especially impressive along the Shannon at Clonmacnoise itself. At Clonmacnoise the esker grades from a singular ridge of coarse gravels to a more haphazard, hummocky topography.

The esker feature is important in that it records faithfully the ice movement across this area of Offaly during the final phase of deglaciation. Wide belts of associated sands and gravels east of Clonmacnoise, and east of Clara, flanking the esker beads themselves, have long been studied and are part of associated ice marginal fan and delta systems. The sands and gravels within the esker are comprised chiefly of limestone clasts.

Site Importance – County Geological Site; recommended for Geological NHA

The feature is a haphazardly arranged, high, striking example of a dry sand and gravel ridge, and stands proud of the surrounding landscape. This is the longest esker system in the country and is a superb example of a relict subglacial conduit system. Though recommended as a County Geological Site it is of international importance and is also recommended as a Geological NHA.

Management/promotion issues

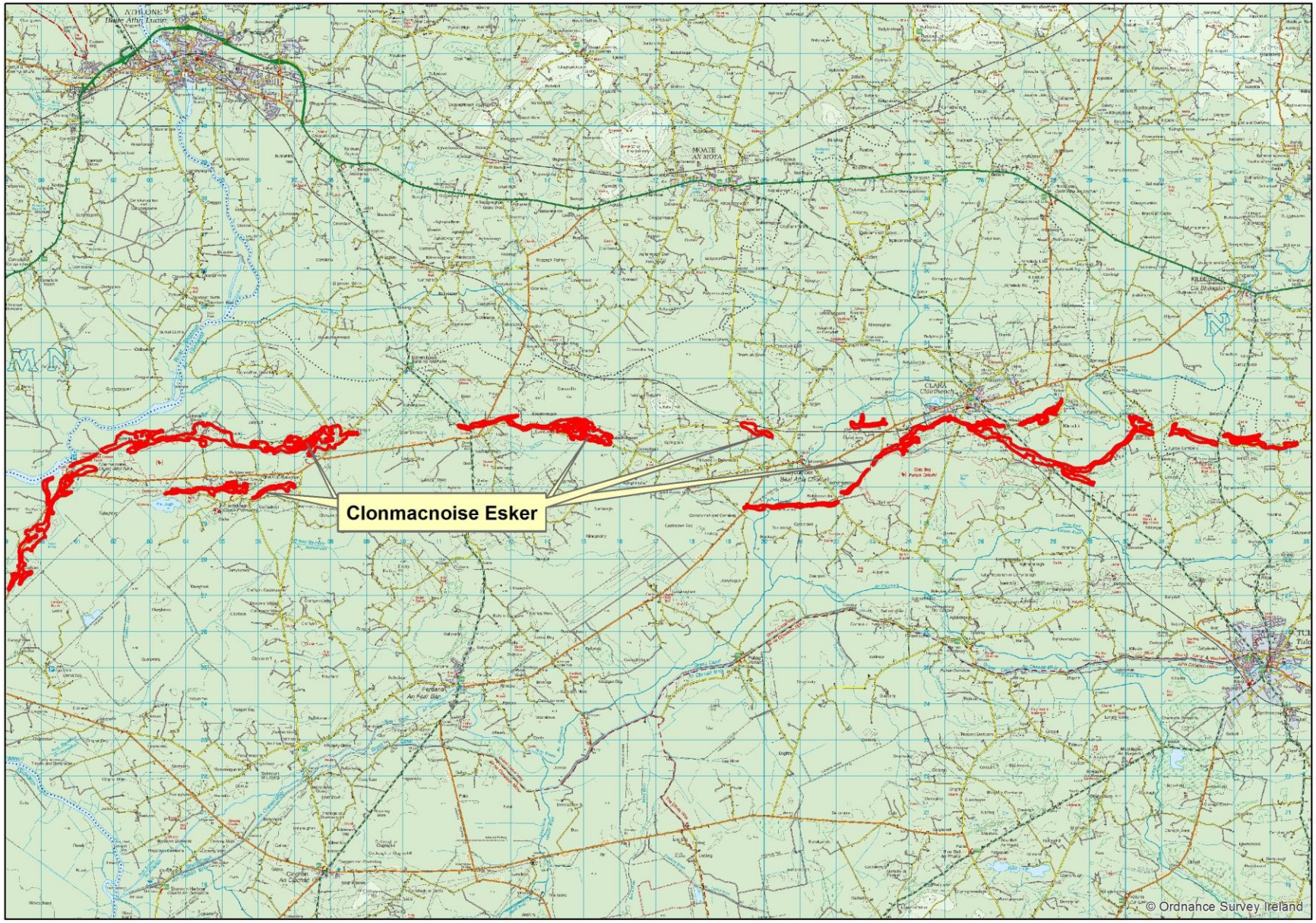
The Lough Nanag Esker and Clonfinlough Esker pNHAs straddle the esker (sitecodes 000910 and 000892 respectively), as does a portion of the Clara Bog SAC (sitecode 000572), and the entirety of these areas, as well as many adjacent, are proposed here as the site. Geological information on the esker could form some elements of the literature associated with the Clnmacnoise Monastery site.

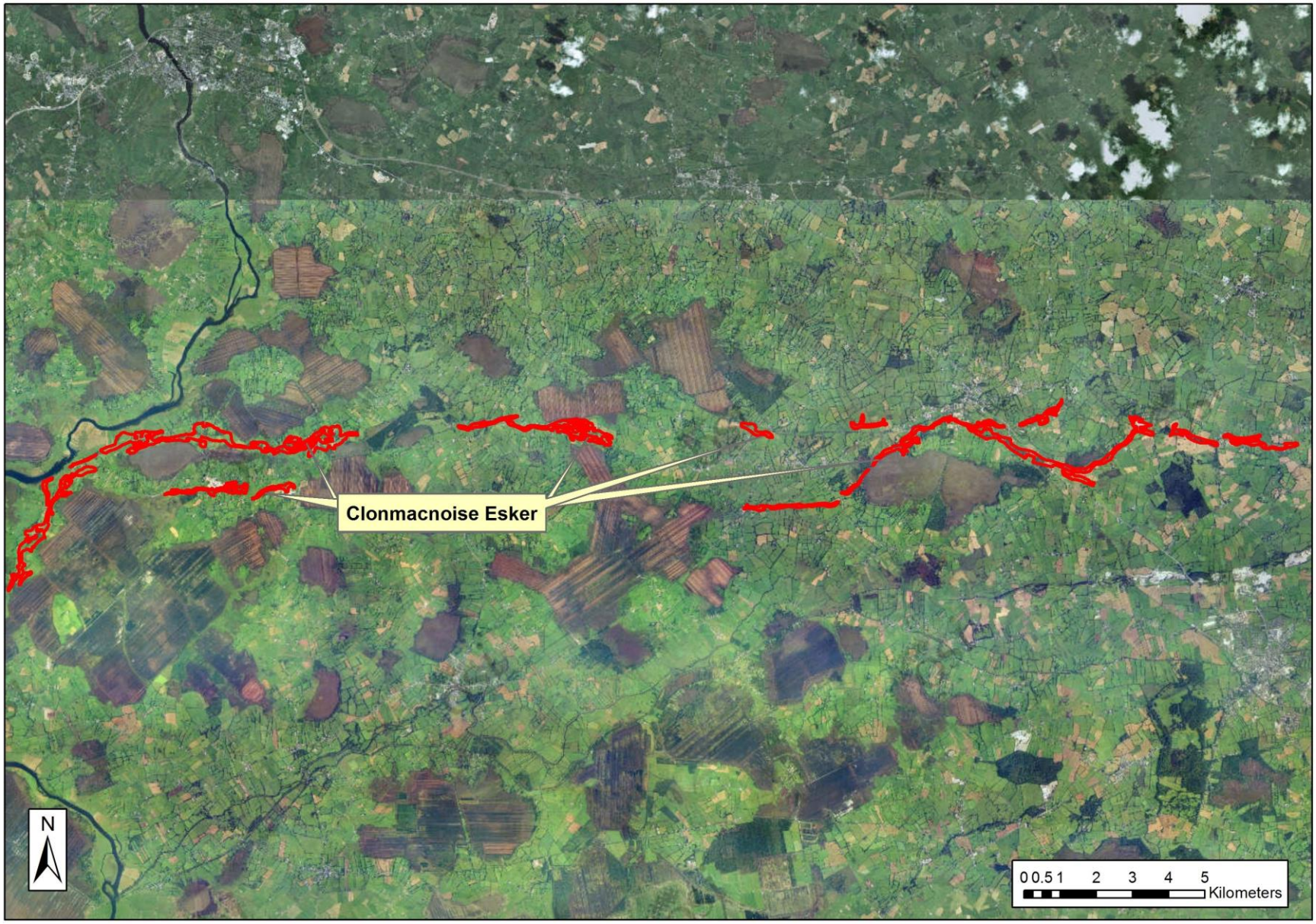
An anabranching segment of the Clonmacnoise Esker near ‘The Pinnacle’, just east of Clonmacnoise.

The steep-sided esker ridge approaching Clonmacnoise.

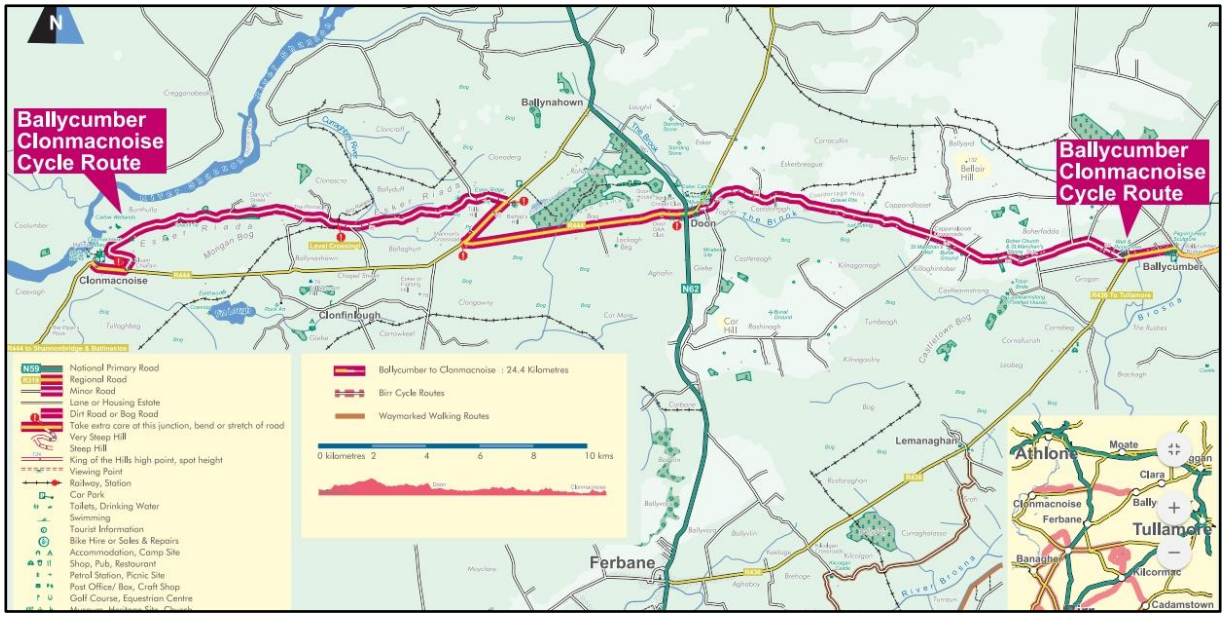
A sinuous portion of the esker, at Clonmacnoise.

A small gravel pit into the esker complex at Cooldorragh.


Clonmacnoise Esker
© Ordnance Survey Ireland


Clonmacnoise Esker
N
0 0.5 1 2 3 4 5
Kilometers

A sketch of the ‘Pilgrim’s Road’ Esker, by George Victor du Noyer of the Geological Survey of Ireland, from the mid-1800s (image reproduced from Feehan, 2013).



The ‘Pilgrim’s Path’ Cycle Route, which traverses the Clonmacnoise Esker.

A flyer for National ‘Pilgrim’s Path’ Day, focussed around the Clonmacnoise Esker.

Appendix IV – Water Quality Laboratory Reports

TEST REPORT NO.: 119446

Analysing
Testing
Consulting
Calibrating

BHP
New Road
Thomondgate
Limerick
Ireland
Tel +353 61 455399
Fax + 353 61 455447

Client: **Dermot Nally Stone**
Clonfinlough
Ballinahowen
Co. Offaly

FTAO: Dermot Nally

BHP Ref. No.: 15/10/843
Order No:
Date Received: 29/10/15
Date Completed: 09/11/15
Test Specification: Nil
Item: See below

TEST	Client Reference	Units	Results	Date Analysed	Test Method
	Pond 29/10/2015				
B.O.D.		mg/L	<2	04/11/2015	BHP AC 005
C.O.D.		mg/L	17	30/10/2015	BHP AC 006
Total Suspended Solids		mg/L	<5	06/11/2015	BHP AC 012
pH		-	7.64	29/10/2015	BHP AC 067
Petrol Range Organics (as C_6-C_{10})		mg/L	<0.01	09/11/2015	GEO35*
Diesel Range Organics (as C_{10}-C_{20})		mg/L	<0.01	09/11/2015	GEO35*
Mineral Oil (as C_{10}-C_{40})		mg/L	<0.01	09/11/2015	GEO35*
Hydrocarbons (as C_6-C_{40})		mg/L	<0.01	09/11/2015	GEO35*

Additional Information: *Subcontracted to an approved accredited supplier

Authorised by:

John O' Halloran
Date of Issue: 12/11/15

TEST REPORT NO.: 120316

Analysing
Testing
Consulting
Calibrating

BHP

BHP
New Road
Thomondgate
Limerick
Ireland
Tel +353 61 455399
Fax + 353 61 455447

Client: **Dermot Nally Stone**
Clonfinlough
Ballinahowen
Co. Offaly

FTAO: Dermot Nally

BHP Ref. No.: 16/01/524
Order No:
Date Received: 25/01/16
Date Completed: 08/02/16
Test Specification: Nil
Item: See below

TEST	Client Reference	Units	Results	Date Analysed	Test Method
	Pond 25/01/2016				
B.O.D.		mg/L	3.0	27/01/2016	BHP AC 005
C.O.D.		mg/L	10	27/01/2016	BHP AC 006
Total Suspended Solids		mg/L	<5	27/01/2016	BHP AC 012
pH		-	7.89	25/01/2016	BHP AC 067
Petrol Range Organics (>C_6-C_{10})		mg/L	<0.01	08/02/2016	GEO35*
Diesel Range Organics (>C_{10}-C_{20})		mg/L	<0.01	08/02/2016	GEO35*
Mineral Oil (>C_{10}-C_{40})		mg/L	<0.01	08/02/2016	GEO35*
Total Hydrocarbons (>C_6-C_{40})		mg/L	<0.01	08/02/2016	GEO35*

Additional Information: *Subcontracted to an approved accredited supplier

Authorised by:

John O' Halloran
Date of Issue: 17/02/16

TEST REPORT NO: 161989

Client: Dermot Nally Stone

Clonfinlough
Ballinahowen
Co. Offaly

BHP Ref. No: 19/03/2823
Quote Ref: QC003354
Order No: To Follow
Sales Order: 57548
Date Received: 26/03/2019
Date Sampled: 26/03/2019
Date Completed: 03/04/2019
Sample Type: Surface Water

FTAO: Dermot Nally
Site: Clonfinlough Quarry
BHP Ref: Once-off_Surface Water
Client Ref: Pond

Testing
Analysing
Consulting

BHP Laboratories
New Road
Thomondgate
Limerick
Tel: +353 61 455399
Fax: +353 61 455261
EMail: johnohalloran@bhp.ie

Test		Units	Results	Customer Limits	Date Analysed	Method
B.O.D.	Acc.	mg/L	1.8		27/03/2019	BHP AC 005
C.O.D.	Acc.	mg/L	<15		27/03/2019	BHP AC 006
pH		pH Units	8.02		26/03/2019	BHP AC 067
Total Suspended Solids	Acc.	mg/L	<5		28/03/2019	BHP AC 012
Petrol Range Organics (>C_6-C_{10})	*	mg/L	<0.0001		03/04/2019	1670
Diesel Range Organics (>C_{10}-C_{21})	*	mg/L	<0.0001		03/04/2019	1670
Mineral Oils (>C_{10}-C_{40})	*	mg/L	<0.01		03/04/2019	1670
Total Petroleum Hydrocarbons (>C_6-C_{40})	*	mg/L	<0.01		03/04/2019	1670

Authorised by: Dervla Purcell, Laboratory Manager **Date Authorised:** 08/04/2019

Additional Information:(Opinions, where stated, are not covered by accreditation)

Acc.:	INAB Accredited
ND:	None detected in volume analysed
^	Potable water matrix
*	Subcontracted to an approved accredited laboratory
**	This sample has been analysed outside recommended stability times. It is therefore possible that the results provided may be compromised.
~ :	Sample Condition : ACCEPTABLE

Appendix V – Dust Deposition Monitoring Reports

3. REPORTS AND RAW DATA

3.1 DUST

3.1.1 INTRODUCTION

Dust monitoring was conducted between the 14th July 2008 and 30th October 2008. The monitoring conducted was by the Bergerhoff method. The analysis was conducted in independent sample runs, the first covering the period the 14th July to the 22nd August with the second sample covering the period of the 22nd August to the 30th October.

The summer months were chosen for the analysis as this is the time of year when it would be expected that dust levels would be at their highest. This is in accordance with normal practice required by the EPA, which requires that dust analysis be performed between April and September when rainfall is lower and therefore dust generation is highest. It must be noted that the second of the sample runs ran over this recommended period and therefore also measured dust fall through October.

There are four dust monitoring stations established on the site as detailed below:

D1 - Opposite the site office.
This location is adjacent to the exit/entrance to the gravel pit on the opposite side of the road from the site office. This monitoring location was selected to give an indication of the quantities of dust being exported from the site on vehicles leaving the facility.

D2 - At the southwest of the site near the lagoons.
This monitoring location was between the site and the neighbouring properties to the south of the site. This location was selected to give an indication of the quantity of dust being exported from the pit at the southern boundary.

D3 - Above the plant (Not used during 2008).
This monitoring location was chosen to be representative of the quantity of dust that is generated in the vicinity of the main crushing/screening plant operating at the site.

D4 - At the north east of the site, between the gravel pit and the Clonmacnoise/Ballynahown road.
This location was chosen to indicate the levels of dust being exported off the site and on to the neighbouring lands surrounding the pit at the northern boundary. The north boundary was selected as the prevailing wind is from the south west and therefore this is the direction in which the greatest quantity of wind blown dust would be expected.

These locations are identical to those used in prior dust monitoring at the site. However, works that were conducted at the site during the initial monitoring period meant that it became unsafe to access D3. As a result, there is no data from this monitoring station during 2008. All four dust monitoring locations have been included on Drawing No.1 attached to this report.

3.1.2 RESULTS

TABLE 1: RESULTS OF DUST MONITORING 2008

(All measurements in mg/m^2.d)		**14/07/08 to 22/08/08**	**22/08/08 to 30/10/08**
D1 – Entrance (N.W. of Site)	Total Dust	32	74
	% Volatile	26.6	30.5
	Organic	8.5	22.6
	Inorganic	**23.5**	**51.4**
D2 - Behind Lagoons (S.W. of Site)	Total Dust	190.0	28.6
	% Volatile	100	100
	Organic	190.0	28.6
	Inorganic	**0.0**	**0.0**
D3 – Near Crushing Plant (S. of Site)	Total Dust	n.r.	n.r.
	% Volatile	n.r.	n.r.
	Organic	n.r.	n.r.
	Inorganic	n.r.	n.r.
D4 - Between Site and Road (N.E. of Site)	Total Dust	64.7	37.3
	% Volatile	40.2	41.3
	Organic	26.0	15.4
	Inorganic	**38.7**	**21.9**

Total dust fall is made up from organic and inorganic material. The organic fraction consists mainly of algae that have grown in the sample during the month-long test period and also some seeds, pollen and insects that were blown or fell into the dust collector during sampling. Due to the long nature of the sample period and the passive nature of the collection method, it is difficult to fully reduce this organic material in the sample, so instead the organic material is quantified as a percentage of the total dust. Organic material is not related to activity at the gravel pit. It is reasonable therefore to ignore the organic fraction of the total dusts and instead concentrate on the inorganic fraction in any assessment of dust at a facility. It is likely that most of the inorganic material would have originated at the gravel pit.

In the following assessment of dust, it is the inorganic fraction of the total dust that is used as the relevant measure. The inorganic fraction of the total dusts are presented in Table 2 below, along with the mean quantity of dust at each location over the monitoring period.

TABLE 2: INORGANIC FRACTION OF TOTAL DUST DURING THE DUST MONITORING

Inorganic Fraction of Dusts	Units	22/05/2007 to 29/06/2007	29/06/2007 to 22/08/2007	Mean Deposition per day
D1 - Entrance	$mg/m^2.d$	23.5	51.4	37.5
D2 - Behind lagoons	$mg/m^2.d$	0.0	0.0	0.0
D3 - Above plant	$mg/m^2.d$	n.r.	n.r.	n.r.
D4 - Between site and road	$mg/m^2.d$	38.7	21.9	30.3

The limit placed on the levels of dust at the site boundary generated as a result of activity at the gravel pit by a condition of the Planning Permission/Registration is **350 mg/m^2.day.**

D1

The quantity of dust at D1 is between 23.5 mg/m^2.day and 51.4 mg/m^2.day giving an average result of 37.5 mg/m^2.day over the monitoring period. This result was 10% of the dust limit set out in the Planning Conditions.

The dust monitor D1 is located immediately adjacent to the entrance to the site. This area has been constructed from dense bitumen macadam and provides a smooth hard surface for a considerable distance into the gravel pit. Under normal conditions, trucks travelling along this road would generate the majority of dust collected at monitoring point D1. Due to the risk of dust generation along this route, there is a dedicated vacuum tanker available on site. This tanker regularly sprays the paved area to suppress dust generation. This is important during periods of dry weather when dust generation by traffic exiting the facility can become a problem.

The result of dust monitoring during 2008 showed that as with 2007, there was significant reductions over the dust recorded during 2005 and 2006. During the monitoring period covered in this report, there was no issue associated with elevated dust at D1 and no further remedial measures are recommended.

D2

The quantity of dust at D2 was 0.00 mg/m^2.day in both monitoring periods.

D2 was located inside the boundaries of the gravel pit, on the south western side of the site between the gravel extraction area and the southern neighbours to the site.

During the monitoring period covered in this report, there was no issue associated with elevated dust at D2 and no further remedial measures are recommended.

D3

Due to health and safety concerns, there was no result from the monitoring station D3 during 2008.

D4

The quantity of dust at D4 is between 21.9 mg/m^2.day and 38.7 mg/m^2.day giving an average result of 30.3 mg/m^2.day over the monitoring period. This result was 8.6% of the dust limit set out in the Planning Conditions.

The monitoring at D4 was designed to establish what quantity of dust is generally being exported from the gravel pit on to neighbouring lands to the north. The location was chosen to be downwind under prevailing wind conditions, to pick up the greatest quantity of windblown exported dust possible. The monitoring station is located at the boundary of the site and is an accurate representation of the dust that would be encountered on the neighbouring lands at this point.

The levels of dust recorded at D4 are a reduction on levels recorded during 2005, 2006 and 2007 and are well below that set out in the Planning Permission/Registration. No further remedial measures are required.

3.1.3 DISCUSSION

The dust analysis conducted at the site was intended to present an overview of the local environment as regards dust. Three of the four existing dust monitoring stations were used during 2008, each intended to give information on dusts within a different aspect/area of the site.

Typically, dust levels inside the boundaries of the gravel pit itself can be high. This is normal in such facilities and no dust limits exist for this area. The only limits that could be imposed on dusts within the site boundaries are those necessary to ensure health and safety (such as ensuring that dust is not so excessive as to make breathing difficult, providing good visibility, etc.). These issues are not a problem at the site.

Normal dust controls that currently operate at the facility, such as spraying stockpiles, grading roads and limiting vehicle speed within the pit, all help to reduce dust levels within this area to acceptable levels.

The results of dust monitoring show that the export of dust from the site by wind or other natural processes is not presenting problems on neighbouring lands.

Based on the analysis and visual inspection, no problems associated with wind blown dusts are evident at the facility, nor are any anticipated to occur in the coming period of activity.

3.1.4 RECOMMENDATIONS

As there have been no issues of dust contamination arising from the monitoring programme, no further dust mitigation measures, other that those already being implemented are recommended.

TEST REPORT NO.: 119752

Analysing
Testing
Consulting
Calibrating

Client: **Dermot Nally Stone**
Clonfinlough
Co.Offaly

FTAO: Dermot Nally

BHP Ref. No.: 15/11/812-814
Order No:
Date Received: 26/11/15
Date Tested: 27/11/15
Test Specification: Nil
Item :See below

BHP
New Road
Thomondgate
Limerick
Ireland
Tel +353 61 455399
Fax + 353 61 455447
E Mail johnohalloran@bhp.ie

TEST	Client Reference	Units	Results	Standard Reference
	Sampling period: 29/10/15 to 26/11/15			
Dust Deposition	**D1**	mg/m^2/day	150.4	VDI 4320 Part2
Dust Deposition	**D2**	mg/m^2/day	71.2	VDI 4320 Part2
Dust Deposition	**D3**	mg/m^2/day	175.1	VDI 4320 Part2

Additional Information: All locations are inside the EPA Limit of 350 mg/m2/day.

Authorised by:

Colette Hannan

Colette Hannan
Date of Issue: 08/12/15

TEST REPORT NO.: 120716

Analysing
Testing
Consulting
Calibrating

BHP
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Client: **Dermot Nally Stone**
Clonfinlough
Co.Offaly

FTAO: Dermot Nally

BHP Ref. No.: 16/02/700-702
Order No:
Date Received: 24/02/16
Date Tested: 01/03/16
Test Specification: Nil
Item :See below

TEST	Client Reference	Units	Results	Test Method
	Sampling period: 26/01/16 to 24/02/16			
Dust Deposition	**D1**	$mg/m^2/day$	128.4	BHP AC 017
Dust Deposition	**D2**	$mg/m^2/day$	102.4	BHP AC 017
Dust Deposition	**D3**	$mg/m^2/day$	92.3	BHP AC 017

Additional Information: All locations are inside the EPA Limit of 350 mg/m2/day.

Authorised by:

Colette Hannan

Colette Hannan
Date of Issue: 03/03/16

BHP/AC/F115

TEST REPORT NO: 163364

Client: Dermot Nally Stone

Clonfinlough
Ballinahowen
Co. Offaly

BHP Ref. No:	**19/04/2872-2873**
Quote Ref:	**QC003354**
Order No:	
Sales Order:	**59202**
Date Received:	**24/04/2019**
Date Sampled:	**24/04/2019**
Date Completed:	**01/05/2019**
Sample Type:	**Environmental Dust**
Sampling Period:	**26/03/2019 - 24/04/2019**

Testing
Analysing
Consulting

BHP Laboratories
New Road
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FTAO: **Dermot Nally**
Site: **Clonfinlough Quarry**
BHP Ref: **Once-off_Environmental Dust**

TestName		ClientRef	Units	Results	DateAnalysed	Method
Dust Deposition	Acc	D1	mg/m²/day	309	01/05/2019	BHP AC 017
Dust Deposition	Acc	D2	mg/m²/day	34	01/05/2019	BHP AC 017

Authorised by: **Dervla Purcell** *Laboratory Manager*

Date Authorised: 02/05/2019

Additional Information:(Opinions, where stated, are not covered by accreditation)
Acc.: **INAB Accredited**
Notes: **All sample locations were inside the EPA limit of 350 mg/m2/day.**
Total dust residues were ashed at 600°C for 1 hour to determine inorganic dust deposition.
Organic deposition was determined by subtracting the inorganic dust deposition from the total dust deposition.
Sample Conditions: **All samples in acceptable condition.**

Appendix VI – Noise Monitoring Reports

3.2 NOISE

An acoustic survey was carried out on the 22nd August 2008 to assess the level of noise generated as a result of the aggregate screening/crushing plant (herein after called the 'Plant') and gravel extraction operation at Clonfinlough, Co. Offaly.

This report:

1. Presents the noise levels measured at five noise sensitive locations in the locality
2. Identifies noise sources in the area
3. Compares the results with restrictions on noise levels set out in Planning Conditions for the site.

3.2.1 Measuring Equipment

Equipment Type

A Bruel and Kjaer Type 2260 Observer real-time modular precision noise analyser was used to perform the measurements. This meter is a Type 1 instrument that complies with BS 5969 and BS 6698. The software version is BZ 7202. The following sound meter response times and levels were used, using the fast response time and measuring in A-weighted decibels. The dynamic range of the meter is 80 dB(A) and the range used was 20 – 100 dB(A) apart from during the plant grading when this range was adjusted to 40 – 120 dB(A).

Calibration

The 2260 meter was calibrated prior to use in accordance with Bruel and Kjaer's instructions. The calibrator used was a Bruel and Kjaer 4231 type calibrator. (Calibrated at 93.9 dB(A) +/0.20dB(A) with a level step of 20dB(A) and a frequency of 1kHz). The meter was calibrated before and after measurements were taken. There was no significant drift observed during any of the readings (all drift was below 1dB(A)).

Equipment Traceability

Meter:	Bruel and Kjaer Type 2260	Serial No: 2234447
Microphone	Bruel and Kjaer Type 4189 ½"	Serial No: 2174920
Calibrator	Bruel and Kjaer Type 4231	Serial No: 2263208

The sound level meter was mounted on a tripod stand at a height of 1.5 meters above the ground.

3.2.2 Details Concerning the Locality, Locations and Conditions of the Monitoring

Details Concerning the Locality

The gravel pit development occupies an area of approximately 16 Ha. Of this area, 11.2 Ha is pre-1963 workings whilst 4.8 Ha has been worked since 1991.

The gravel pit at Clonfinlough is located in a rural farming area of Co. Offaly, approximately 12km due south of Athlone, 3.5km east of the village of Clonmacnoise and 4km west of Ballinahown village. This site is immediately south of the main Moate to Shannonbridge road (R444). The nearest village to the site is Clonfinough, approximately 0.5km due south.

The perimeter of the site is at an elevation of 58-73 O.D. and working levels are between 47 and 53m O.D. The extraction operation is therefore very well screened from surrounding lands and roads by the relatively high levels of the site perimeter and the presence of hedgerows and soil bunds. The lands surrounding the site are in agricultural production (mainly permanent pasture).

Housing surrounding the site is mainly of dispersed farmhouses with some new houses on plots not directly related to farming. There are 39 dwelling houses and one campsite dotted around the countryside in the immediate vicinity to the gravel pit. The 39 houses and other buildings in closest proximity to the development are marked on the map included in Section 9 of this report.

Due to the number of buildings that surround the gravel pit, it was not possible to assess the noise at each noise sensitive location (NSL). Instead, the five most sensitive locations were selected and then monitored. All the NSLs and the monitoring points (MPs) are marked on the map included in Section 9 of this report. The monitoring locations were as follows:

- MP1 at the two dwelling houses (marked N9 and 10) located approximately 70 meters north of the gravel pit boundary,
- MP2 at the entrance of the gravel pit opposite the site office (N6), approximately 10 meters from the gravel pit,
- MP3 in the car parking area of the church/village hall (N30), approximately 80 meters south of the gravel pit,
- MP4 in the car park directly in front of the Glebe Campsite shop, approximately 400 meters to the south east of the site (N18).
- MP5 inside the Glebe Campsite, approximately 30 meters from the toilet block on the site side.

The monitoring locations have remained unchanged from the last acoustic survey conducted by EMS Consulting Ltd in 2005, 2006 and 2007.

The weather during the survey was dry and warm. There was a noticeable north westerly breeze of approximately 5m/sec (10-12mph) blowing during the survey; this is within the EPA Guidelines for acceptable wind conditions for the measurement of noise.

As sound levels downwind tend to be higher compared to a situation with no wind, it would be expected that there would be slightly elevated noise levels downwind of the plant and slightly reduced levels at upwind locations. In this survey, the downwind locations would be the camp shop (MP4) and the campsite (MP5), with the upwind locations being the Clonmacnoise/Ballinahown road (MP1) and the site office (MP2).

There was some noise due to the effect from birdsong, insects, livestock and aviation sources. Human activity had a significant role in total noise encountered during the survey in 2008 as a number of construction projects were ongoing in the vicinity of the gravel pit. As in previous acoustic surveys conducted at the gravel pit, road traffic noise was dominant at all monitoring locations during vehicle passes and was audible throughout the survey as traffic approached or retreated from the monitoring locations. In addition, there was some agricultural and Bord na Mona activity audible during the survey.

Where it was considered likely that traffic was greatly impacting on the results of the survey, two types of readings were taken. One was where the meter was paused as traffic passed, whilst the other was a continuous reading. It was hoped by this method to be able to assess the impacts from the gravel pit on the noise environment of the area and also to assess the actual noise levels experienced at the NSLs. Where it was not considered that traffic would greatly impact on the result, the meter was not paused but allowed to run continuously and the number of vehicle movements counted.

Details concerning the Measuring Positions at NSLs

All monitoring points used were selected to give an accurate assessment of environmental noise emanating from the plant and the gravel pit facility at each noise sensitive location (NSL). To ensure that comparisons between this survey and future performance can be made, it is recommended that these new monitoring points are not altered in any future noise assessment.

MP1; National Grid Ref: 205011 / 230286

Measurements were made at MP1 located between NSL9 and 10. This location is approximately 70 meters north of the boundary of the gravel pit and is screened from the pit by an intervening hill. Measurements were made in a field driveway in between NSL9 and 10. The measurements were taken on a grassy surface approximately 1 meter from the edge of the carriageway. The land in front of this point rises gently to the south forming a hill. There was some vegetation to the left of the meter, on the boundary with NSL10 and the field, and due to the breeze on the 22nd August when these measurements were taken, there was some noise from wind in vegetation.

Plate 1: Location of MP 1.

Natural noise sources at MP1 during the survey were mainly made up from birdsong, cattle and insect noise.

When traffic passed directly behind the meter it was the dominant noise source in the area. The other man-made noise sources audible were from small engine noise in the distance, aviation, agricultural noise and some human activity.

Of significance at this point was construction noise audible from works on the house adjacent to the monitoring location.

The plant was audible at MP1 as a faint rumble. The reversing alarms of the loaders were also audible.

It was difficult to establish the dominant source in the absence of traffic at MP1. It was instead likely that there was no clearly dominant noise source other than traffic and that background noise at MP1 during the survey was made up from a combination of construction noise, distant road traffic noise, birdsong and the gravel pit.

Measurements were made between:

09.59 and 10.23 on the 22nd August 2008 when the meter was paused as traffic passed and between 10.23 and 10.33 when the meter ran continuously.

MP 2; National Grid Ref: 204534 / 230281

Measurements were made at NSL 6, the site office. This location is approximately 10 meters from the gravel pit entrance and is screened from the gravel pit by a low landscaped embankment. Measurements were made in the centre of the slip road at the edge of the Ballinahown to Clonmacnoise road.

Plate 2: The Location of MP 2

The measuring position was on a hard surfaced roadway. There were medium to high shrubs and trees surrounding the position. All vegetation had leaves and there was some noise generated by wind blowing through this vegetation.

Natural noise sources in the area included birdsong, insect noise and dogs barking whilst aviation and human activity were also factors contributing to the overall noise level. Road traffic noise was the dominant noise source when traffic passed directly by the meter. There was also road traffic noise audible as vehicles approached or retreated from the monitoring point. When there was no traffic, natural noise from birdsong was dominant.

The plant operating at the gravel pit was not audible at MP2 although some activity could be heard. The noise of mobile plant and lorries operating within the site could be faintly heard in the absence of other louder noises.

Measurements were made:

Between 10.37 and 11.11 on the 22nd August 2008, when the meter was paused as traffic passed and between 11.11 and 11.26, when the meter was run continuously.

MP3; National Grid Ref: 204563 / 229785

Measurements were made at MP3 in the car park of the community centre. This location is approximately 80 meters south of the gravel pit boundary.

The meter was located on a hard concrete surface. To the front of the meter lies an open laneway running to the rear of the community centre whilst the building itself lies to the right. There was a wall of approximately 1.5 meters in height to the left of the meter. Care was taken to ensure that the meter was pointing towards the gravel pit and that it was shielded as little as possible by the building. Behind the community centre and on the opposite side of the wall, the land rises gently up towards the gravel pit.

Plate 3: The Location of MP3

Natural noise sources at this location were from birdsong and insect noise, although noise from cattle, sheep and dogs was also significant. Other noise sources included aviation noise, agricultural noise and human activity. In addition, there was construction work ongoing on the opposite side of the carriageway from the monitoring location. This construction work included the use of a con-saw and numerous vehicle movements.

The site was faintly audible in the absence of noise from the construction site.

Road traffic noise was significant when traffic passed directly behind the meter, however these events were rare.

Measurements were made between 12.56 and 13.26 on the 22nd August 2008.

MP4; National Grid Ref: 204992 / 229635

Measurements were made at MP4. This location is approximately 400 meters east south east of the gravel pit and is screened from it by an intervening hill. Measurements were made in the car park approximately 10m in front of the Glebe Campsite Shop and 20m back from the road.

Plate 4: The Location of MP 4

The measuring position was on a rough gravel car park. There was medium to high hedgerows to the front of the meter on the opposite side of the road, as well as some tall trees to the left and right of this monitoring location. To the rear of the meter was the house and camp shop. Due to the breeze blowing from the northwest, there was noise audible from wind in vegetation.

Natural noise sources at this location include birdsong, insect noise and animal noise. The campsite dog was barking in the background, adding to background noise at this location. In addition, human activity, aviation noise, small engine noise and agricultural activity were all significant noise emitters audible at MP4.

As with many other sites during 2008, there was construction work ongoing approximately 250m west along the road. This activity consisted of an excavator working to the rear of a house and this activity was the dominant noise emitter at MP4 in the absence of traffic. When traffic passed by the meter location, then traffic was the dominant noise emitter.

The plant was clearly audible at this point. The character of the noise from the site was that of a fairly loud rumble or drone. The noise levels emitted by the site did not seem to be of a constant volume but varied slightly perhaps as the crushers were loaded, although this could not be confirmed. The noise of stones being loaded into the hopper and the sound of the loaders was not audible at this point. The noise from the facility and that of the construction works was very similar in nature and could easily have been mistaken without further

investigation. However, the loud nature of the construction work due to its proximity to the monitoring location made it the louder of the noise emitters.

Measurements were made:

Between 11.44 and 12.11 on the 22nd August 2008 when the meter was paused for traffic and between 12.11 and 12.21 when the meter ran continually.

MP5; National Grid Ref: 204521 / 229555

Measurements were made at MP5 inside the caravan park. This location was on the camping area approximately 30 meters in front of the toilet block and approximately 10 meters from the children's play area.

The land in front of the meter gently slopes upwards towards the site. There is a tall line of trees that mark the boundary of the campsite and the road. The meter was sitting on tightly mown grass.

Plate 5: The Location of MP5

Natural noise sources at this location were from wind in vegetation (which was blowing towards this location from the gravel pit), birdsong and insects. Other noise sources included aviation noise and human activity. Road traffic was significant during vehicle passes along the road and would have been dominant.

The plant and the loaders within the site are audible at this location as was the construction activity noted at MP4. The construction activity was not as noticeable at MP5 as it was at MP4. During reading 1 and reading 3, agricultural activities in the adjacent field were noticeable as there was some small engine activity (chainsaw) and some tractor activity ongoing.

During all measurements the meter was allowed to run continually and was not paused for traffic.

Measurements were made:

Between 12.23 and 12.53 on the 22nd August 2008.

3.2.3 Measurement Results

Table 3: Results of Noise Survey at Noise Sensitive Locations

Location	Reading	Measurement			Average	Composite	Comment
		1	2	3			
MP1	**$L_{eq(10mins)}$**	**43**	**41**	**54**	**42/54**	**42/54**	
	L_{max}	72	60	78			**Reading3:**
	L_{10}	45	44	40			**Cars 3**
	L_{90}	31	31	29			
	L_{min}	29	28	27			
MP2	**$L_{eq(10mins)}$**	**45**	**46**	**63**	**46/63**	**46/63**	**Reading 3:**
	L_{max}	76	64	84			**Cars 5**
	L_{10}	46	49	65			**Vans 1**
	L_{90}	32	36	37			**Lorries 3**
	L_{min}	29	33	33			**Tractors 1** **Busses 1**
MP3	**$L_{eq(10mins)}$**	**62**	**53**	**51**	**55**	**58**	
	L_{max}	72	78	70			**Meter Ran Continually**
	L_{10}	69	52	50			
	L_{90}	29	31	29			
	L_{min}	26	28	26			
MP4	**$L_{eq(10mins)}$**	**51**	**51**	**57**	**51/57**	**51/57**	**Reading 3:**
	L_{max}	65	69	79			
	L_{10}	53	52	53			**Cars 2**
	L_{90}	45	46	44			**Tractor 1**
	L_{min}	42	43	41			
MP5	**$L_{eq(10mins)}$**	**48**	**41**	**45**	**45**	**46**	
	L_{max}	72	52	59			**Meter Ran Continually**
	L_{10}	49	43	49			
	L_{90}	41	37	37			
	L_{min}	39	34	34			

Fig. 1: Leq Levels

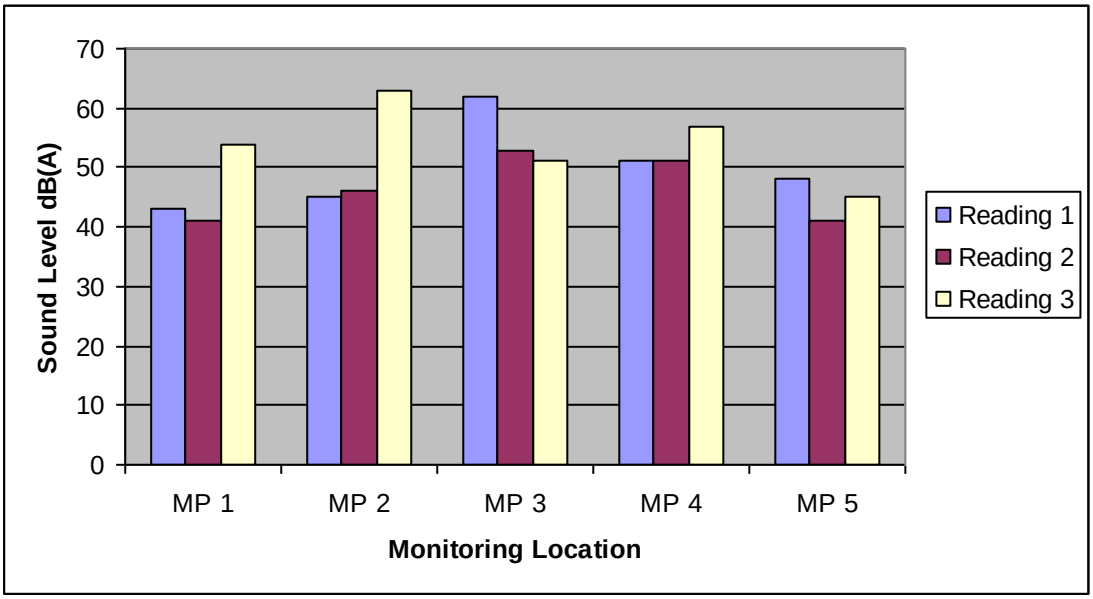
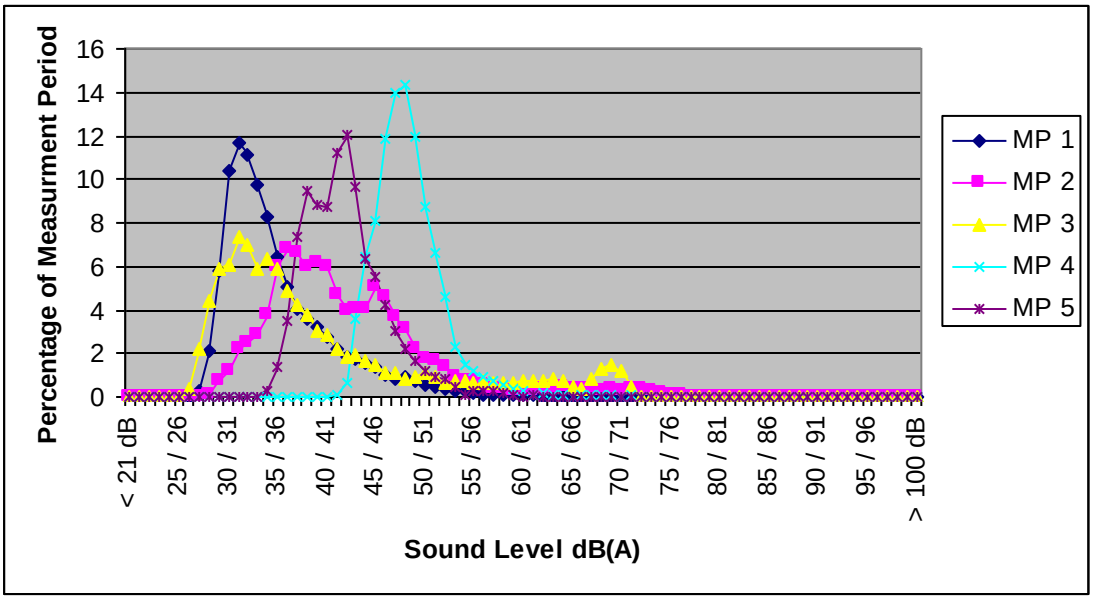


Fig. 2: Distribution of Sound Level over Monitoring Period



MP1

Measurements made at MP1 show a variation in the results between the measurements taken when traffic noise was recorded and when traffic noise was ignored.

When the meter was allowed to run continuously, the Leq $_{(10mins)}$ was 54 dB(A), the L_{90} was 29dB(A) and the L_{10} was 40 dB(A). The dominant noise source during this period was from road traffic noise with the plant, construction site and other noise emitters inaudible when traffic was passing directly behind the meter. Natural noise sources such as birdsong, wind in vegetation and insect noise also contributed to noise during this measurement but were also inaudible during vehicle passes. This measure is a real assessment of the noise experienced by a receptor at MP1.

When the meter was paused as traffic passed (traffic noise ignored), the $Leq_{(10mins)}$ was between 41 dB(A) and 43 dB(A), the L_{10} was between 44 and 45 dB(A) and the L_{90} was 31 dB(A). This is the noise that is directly attributable to the gravel pit facility and background sources. When traffic is ignored at this monitoring point, there was no clearly dominant source of noise. The character of this noise was of a distant rumble from the gravel pit with intermittent noise audible from the construction site and natural sources; neither source being obviously dominant over the other. Neither of these noise sources were tonal or impulsive.

Birdsong and insect noise were natural noise sources audible at MP1. Man-made sources not related to gravel pit activity consisted of human activity in the vicinity of the monitoring location. These noise sources are significant and would be the main contributors to background noise in the area in the absence of traffic movements.

In general, the character of the noise environment at MP1 is one of a quiet rural location close to a road, with traffic noise the dominant noise source.

MP2

Measurements made at MP2 show that when the meter was paused as traffic passed, the $Leq_{(10mins)}$ was between 45 and 46 dB(A), the L_{10} was between 46 and 49 dB(A) and the L_{90} was between 32 an 36 dB(A). These results are relatively consistent with each other and show a steady noise level in the area.

The noise emitters that were contributing to the levels of noise recorded at MP2 were human activity both inside the gravel pit facility, in the office and in the farm yard, the barking of a dog, a train passing through the Bord na Mona bog to the north of the site, birdsong, insect noise, wind in vegetation, traffic movements within the gravel pit, distant road traffic and aviation noise.

The loudest single noise source was traffic moving about within the site boundaries; however this was an infrequent event and was not sufficiently loud to skew the results in such a short time period. The dominant noise source at MP2 was the noise from traffic passing behind the monitoring location.

The plant was not audible at MP2.

When the meter was allowed to run continually, the Leq $_{(10\ mins)}$ recorded was 63 dB(A), the L_{10} was 65 dB(A) and the L_{90} was 37 dB(A). During this reading, the meter ran continually and the traffic movements were noted. Traffic was dominant during this reading and this is seen in the elevation of all parameters over that recorded during readings 1 and 2.

The noise character at this location is one of a quiet rural environment close to a roadway. The main noise sources are birdsong, human activity, wind in vegetation and animal calls, although activity from the site also contributes to noise at this location. When traffic passes by the monitoring point, traffic noise is the dominant noise source.

MP3

Measurements taken at MP3 were all made with the meter running continually. The measurements made at MP3 show a $Leq_{(10\ mins)}$ of between 34 and 39 dB(A) giving a composite $Leq_{(30\ mins)}$ of 37 dB(A). During this time, the L_{10} varied from 36 to 37 dB(A) and the L_{90} from 27 to 28 dB(A).

In previous noise surveys at MP3, the meter was paused for all traffic movements. This was because the very quiet nature of the location at MP3 means that any traffic movement heavily distorts the results of the analysis. However, during the analysis taken on the 22nd August 2008, there was construction activity ongoing to the rear of the meter. This activity was clearly dominant at MP3 and as a result, all other noise sources, including road traffic, were insignificant in comparison. The construction activity included the use of generators, con-saws and the movement of traffic.

At this location, the other sources of audible noise were birdsong, insect noise, cattle noise, wind in vegetation, aviation noise, dogs barking and road traffic.

The plant was not audible at this location, neither was any site activity.

This was typical of construction activity during the analysis of 2008.

MP4

During readings 1 and 2, the meter was paused during traffic movements to measure noise without the influence of traffic. During reading 3, traffic noise was measured. During readings 1 and 2, the $Leq_{(10mins)}$ was 51 dB(A), the L_{10} was between 52 and 53 dB(A) and the L_{90} was between 45 and 46 dB(A).
During the measurement, the dominant noise was from an excavator working at a dwelling house adjacent to the monitoring location. In addition, the plant was audible in the distance as a rumble. The noise from the gravel pit and the noise of the excavator were very similar, but the closer proximity of the excavator to the monitoring location meant that the excavator was the dominant noise.

When the effects of traffic noise are included in the survey, the $Leq_{(10mins)}$ was 57 dB(A). The L_{10} during this period was between 53 and the L_{90} was 44 dB. During this period, traffic noise was clearly the dominant noise source.

Other audible sources of noise during the monitoring were wind in vegetation, birdsong, insect noise, human activity and road traffic as vehicles passed along the road at a distance from the monitoring location. These noise sources, whilst identifiable at the time of the monitoring, were unlikely to have much impact on the measured Leq due to the dominance of the louder noise sources already detailed.

MP5

Measurements taken at MP5 were all made with the meter run continually. The measurements made at MP5 show a $Leq_{(10\ mins)}$ of between 41 and 48 dB(A), giving a composite $Leq_{(30\ mins)}$ of 46 dB(A). During this time, the L_{10} varied from 43 to 49 dB(A) and the L_{90} from 37 to 41 dB(A).

As with MP4, the plant was audible as a rumble during this analysis as was the excavator, but a tonal component to the noise was not evident. Instead, the noise appeared to be a more continual background rumble that was less intrusive than that noted at MP4.

In addition to the plant and the excavator, there was a significant noise input from agricultural activity in a field neighbouring the caravan park. This activity involved operation of a chainsaw and a tractor and trailer.

Whilst the most consistently audible noise during the survey was that associated with the gravel pit and the excavator operation, the dominant noise source at MP5 was traffic as it passed along the road to the front of the camp shop.

Other noise sources audible at MP5 were birdsong, human activity, wind in vegetation and distant traffic noise.

The noise character at MP5 is of a quiet rural location.

3.2.4 Discussion

The limits on noise that have been imposed on the facility are that the Leq must not exceed 55 dB(A) during the day and 45 dB(A) during the night. The subsections below relate the measured noise levels with that prescribed in the Planning Permission.

MP1

On the 22nd August 2008, the calculated composite $L_{Aeq(20mins)}$ when the effects of traffic were ignored was 42dB(A). This was also the rating level. This level is 13dB below the 55dB(A) limit imposed on the gravel pit.

On the 22nd August 2008, the measured $L_{Aeq(10mins)}$ when the effects of traffic were included was 54dB(A). This was also the rating level. This noise level is 1dB under the limit placed on the gravel pit. This noise level was due to traffic noise and was not associated with activity from within the gravel pit.

The natural barrier offered by the walls of the gravel pit and the distance of the plant from this location significantly attenuates noise from the site.

MP2

On the 22nd August 2008, the calculated composite $L_{Aeq(20mins)}$ when the effects of traffic were ignored was 46dB(A). This was also the rating level. This level is 9dB below the 55dB(A) limit imposed on the gravel pit.

On the 22nd August 2008, the measured $L_{Aeq(10mins)}$ when the effects of traffic were included was 63dB(A). This was also the rating level. This noise level is 8dB(A) over the limit placed on the gravel pit. This noise level was due to traffic noise and was not associated with activity from within the gravel pit.

The natural barrier offered by the walls of the gravel pit and the distance of the plant from this location significantly attenuates noise from the site.

MP3

On the 22nd August 2008, the calculated composite $L_{Aeq(30mins)}$ when the effects of traffic were included was 58 dB(A). This was also the rating level. This noise level is 3 dB over the limit placed on the gravel pit. This noise level was due to natural sources and activity within the

gravel pit. This noise level was due to construction works ongoing in the vicinity of MP3 and was in no way related to the gravel pit which was inaudible during the survey period.

The natural barrier offered by the walls of the gravel pit and the distance of the plant from this location significantly attenuates noise from the site.

MP4

On the 22nd August 2008 the calculated composite $L_{Aeq(20mins)}$ with the effects of traffic ignored was 51dB(A). This was also the rating level. This level is 4dB below 55dB(A) limit imposed on the gravel pit. The dominant noise oxsurce during this period was construction works ongoing at a dwelling in the vicinity of MP4 however the gravel pit was also a significant noise source at this point.

On the 22nd August 2008 the calculated composite $L_{Aeq(10mins)}$ with the effects of traffic included was 57dB(A). This was also the rating level. This noise level is 2dB(A) over the limit placed on the gravel pit. This elevated noise level was due to traffic noise and was not associated with activity from within the gravel pit.

The natural barrier offered by the walls of the gravel pit and the distance of the plant from this location significantly attenuates noise from the site.

MP5

On the 22nd August 2008 the calculated composite $L_{Aeq(30mins)}$ was 46dB(A). This was also the rating level. This noise level is the 9dB(A) under the limit placed on the gravel pit.

The natural barrier offered by the walls of the gravel pit and the distance of the plant from this location significantly attenuates noise from the site.

3.2.5 Conclusions

In general, the noise character of the environment surrounding the gravel pit is one of a quiet rural location.

The dominant noise source at all monitoring locations is road traffic. The effects of this noise source varies depending on the distance of the location from the road, the road on which the location is situated and the frequency of traffic movements along the road.

During the survey of 2008, there was a significant level of construction activity ongoing in numerous locations surrounding the gravel pit. This resulted in a distortion of results over previous years as construction noise was either the dominant noise source or a significant contributor to noise in 4 out of the 5 monitoring locations analysed in the absence of the direct passage of traffic.

The other main noise sources that exist within the area of the gravel pit are the crushing/screening plant within the site, site related activity such as loader movements and reversing alarms, distant road traffic noise, aviation noise, agricultural activity, birdsong, insect noise, livestock noise, human activity and wind in vegetation when there is any breeze.

At all monitoring locations, the measured equivalent noise levels and the rating level are well below that prescribed in Planning Permission conditions for the site. There is no impulsive or tonal component to the noise that requires adjustment to any measured noise level in the rating level.

Two noise sources with a tonal element occur at the site. These are the reversing alarms of the loaders and the noise from falling stones when the plant is loaded with gravel. Both of these noise sources are of an intermittent nature, occurring infrequently and are of low volume. As such the noise generated as a result of these activities is not significant enough to impact on the noise received by a receptor and therefore do not warrant a change in the rating level.

The natural acoustic barrier offered by the walls of the gravel pit has a major effect in attenuating noise at the noise sensitive locations and should be retained as an acoustic barrier.

3.2.6 Bibliography

1. BS 4142, *Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas*.

2. BS 5228, *Noise and Vibration Control on Construction and Open Sites.*

3. BS 5969, *Specification for Sound Level Meters.*

4. BS 6698, *Specification for Integrating Sound Level Meters.*

5. AVA Acoustics, 2001. *Environmental Acoustics Report for Dermot Nally Carrowkeel, Athlone, Co.Offaly*

3.2.7 Glossary for Noise Report

Decibel (dB):
The unit of sound pressure level, calculated as a logarithm of the intensity of the sound. 0 dB is the threshold of hearing, 140 dB is the threshold of pain. A change of 1 dB is detectable only under laboratory conditions. A change of 10 dB corresponds approximately to halving or doubling the loudness of the sound.

dB (A):
Decibels measured on a sound level meter incorporating a frequency rating (A weighting) which differentiates between sound of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with peoples assessment of loudness.

L_{Aeq} :
The equivalent continuous sound level, the sound level of a steady sound having the same energy as a fluctuating sound over a specified period.

L_{A90} :
The A-weighted noise level exceeded for 90% of the specified measuring period (in BS 4142 it is used to specify background levels).

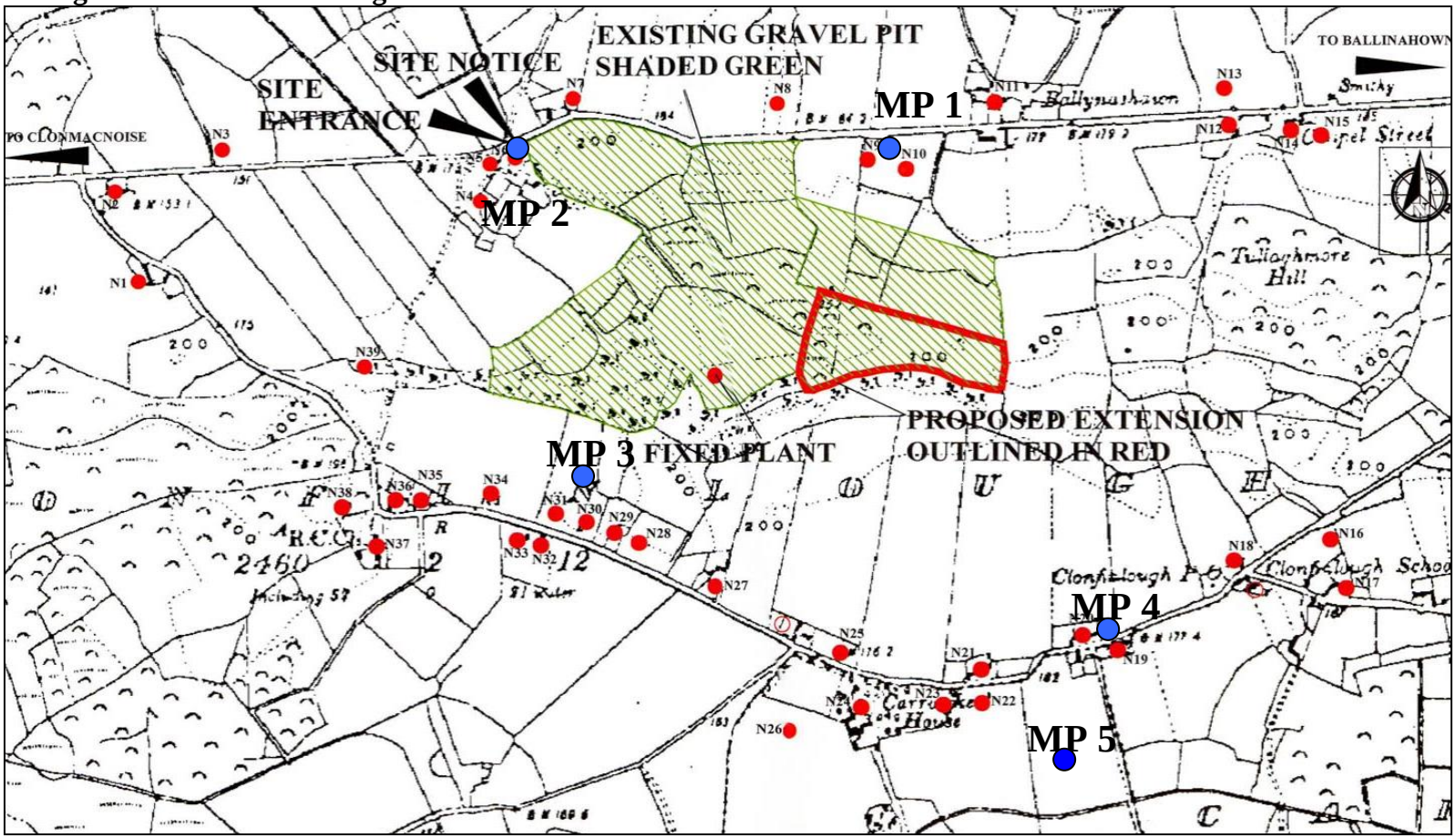
L_{A10}:
The A-weighted noise level that is only exceeded for 10% of the specified measuring period (gives and indication of the loudest noise generated).

Noise:
An unwanted sound. Any sound that has the potential to cause disturbance, discomfort or psychological stress to a subject exposed to it, or any sound which has the potential to cause actual physiological harm to any subject exposed to it or physical damage to any structure exposed to it, is known as noise.

Noise Sensitive Location:
Any dwelling house, hotel or hostel, health building, educational establishment, places of worship or entertainment, or any other facility or area of high amenity, which, for its proper enjoyment requires the absence of noise at nuisance levels.

Rating Level:
The noise level of an industrial noise source that includes an adjustment for the character of the noise.

Figure 3: Noise Monitoring Locations



BHP/CEM/23/A

Analysing
Testing
Consulting
Calibrating

TEST REPORT 119448

Client:
Dermot Nally Stone
Clonfinlough
Ballinahowen
Co. Offaly

FAO: Dermot Nally

BHP Ref No.: 15/10/845
Order No.:
Date Received: 29th October 2015
Date Tested: 29th October 2015
Test Specification: Noise Monitoring

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Item: ***Noise survey at noise sensitive locations at the Dermot Nally Stone facility located at Clonfinlough, Co. Offaly.***

For and on behalf of BHP Ltd.

Graeme Thornton
Date Issued: 29th October 2015
Supplement to report No. N/A

Contents

1.0 Scope of survey

At the request of Dermot Nally Stone, BHP undertook noise monitoring at their operation in Clonfinlough, Co. Offaly. The purpose of this survey was to provide Dermot Nally Stone with the noise data and analysis required as part of their planning requirements.

This report deals with three nominated noise locations at the operation in Clonfinlough, Co. Offaly. The survey was both a night time and daytime survey over the three locations.

2.0 Survey approach

One sound level meter (SLM) was used in the survey, a Cirrus 831C type 1 (serial number D20874FF). The SLM was calibrated at the start of the survey with a CRL 515 calibrator (serial number 52093). The same calibrator was used to check the SLM at the end of the survey, to inspect the microphone drift.

Monitoring and the interpretation of acquired data are to the following standards:

- British Standard: BS 7445 Part 1: 1991 (ISO 1996-1: 1982) Description and measurement of Environmental Noise. Part 1. Guide to quantities and procedures.
- British Standard: BS 7445 Part 2: 1991 (ISO 1996-2: 1987) Description and measurement of Environmental Noise. Part 2. Guide to the acquisition of data pertinent to land use.
- British Standard: BS 7445 Part 3: 1991 (ISO 1996-3: 1987) Description and measurement of Environmental Noise. Part 3. Guide to application to noise limits.

Daytime readings were measured at two locations. The locations were labelled as N1, and N2 and are identified on the map included in Appendix A.

A 15 minute night time reading was measured at a location labelled N3.

Appendix B contains photographs of the noise monitoring equipment at the monitoring points.

3.0 Date of Survey

The survey was carried out on the 29th October 2015 by Graeme Thornton.

4.0 Results

4.1 Noise levels:

Levels are presented on the following pages.

Table 4.1 Day-time Measurements - Noise Locations – Clonfinlough, Co. Offaly (29th October 2015)

Location	Sampling Interval	Duration (mins)	L_{AEQ} dB	L_{A10} dB	L_{A90} dB	Wind speed m/s	Sampling notes
NSL1	08.08-09.08hrs	60	46	49	36	0	The quarry is audible at 32-40dB and occasionally up to 43dB (a tracked machine is working nearby). The screener came on about 20 minutes into the run and was operating at 45-51dB. Occasional cars on the entrance road are at 43dB and one tractor coming in to load went by on the entrance road at 55-59dB. Cattle and birdsong are occasionally up to 44dB. Occasional traffic on the regional road is at 47-48dB.
NSL2	09.17-10.17hrs	60	44	45	37	0-2 South	The quarry (screener) is audible at 39-42dB, occasionally down to 36dB and up to 45dB depending on the rock load. Traffic on the regional road adjacent is occasional and up to 55-59dB.

Table 4.2 Night-time Measurements - Noise Locations – Clonfinlough, Co. Offaly (29th October 2015)

Location	Sampling Interval	Duration (mins)	L_{AEQ} dB	L_{A10} dB	L_{A90} dB	Wind speed m/s	Sampling notes
NSL3	07.24-07.39hrs	15	40	44	27	0	The quarry is just audible at 34-36dB as machinery starting up at 7.30am. Occasional traffic on the regional road is up to 51-55dB. Birdsong is frequently up to 45dB.

5.0 Interpretation of results

5.1 Noise levels;

The typical noise limits for the extractive industry are as follows:

Daytime Limit L_{Aeq} 55dB

Night time Limit L_{Aeq} 45dB

5.1.1 Day-time levels :

As can be seen in section 4.1, L_{Aeq} levels at NSL 1 and NSL 2 are less than the day time limit of 55dB.

5.1.2 Night-time levels :

As can be seen in section 4.2, L_{Aeq} the level at NSL3 is below the night time limit of 45dB.

6.0 Conclusions

The noise contribution made by the operation was below the daytime limit of 55dB at monitoring locations NSL 1 and NSL 2.

The noise contribution made by the operation did not exceed the night time limit of 45dB at monitoring location NSL3.

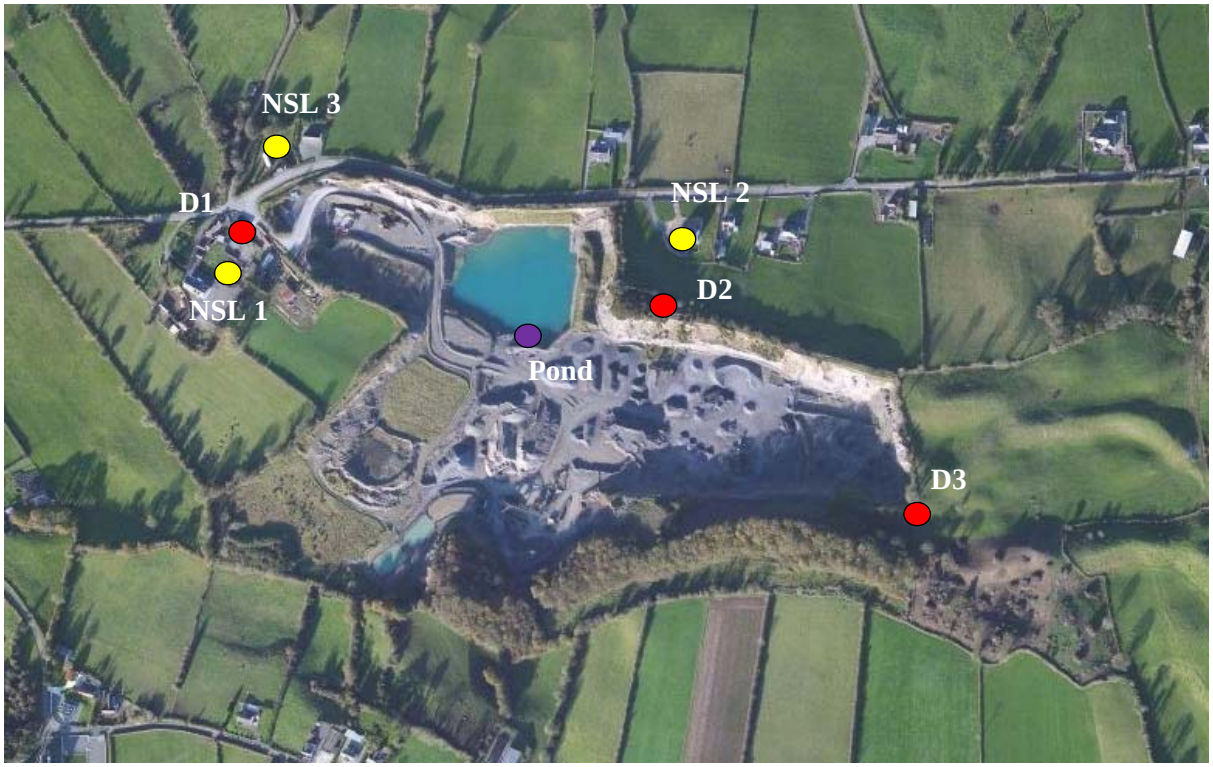
Appendix A

Dermot Nally Stone environmental monitoring location maps

Noise locations

Dust locations

Surface water locations



Appendix B

Photographs of noise monitoring locations

Photograph of noise monitoring location NSL1

Photograph of noise monitoring location NSL2