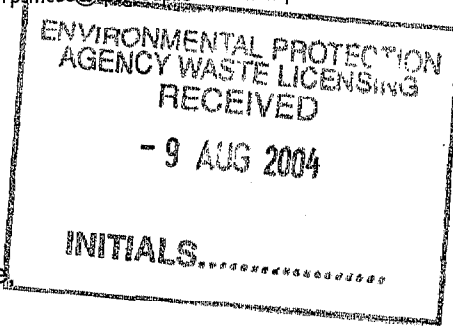


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Licensing Unit,
Office of Licensing & Guidance,
EPA,
Headquarters,
PO Box 3000,
Johnstown Castle,
County Wexford

6th August 2004

Our Ref: 060504001LT0052GAL
File Ref: 350

Re: Ballaghveny Landfill Waste Licence Review Application - Waste Licence 78-2

Dear Sir/Madam,

We refer to the above application for a review of the Waste Licence for Ballaghveny Landfill and to EPA correspondence dated 6th July 2004 requesting additional information in accordance with Article 14(2)(b)(ii) of the Waste Management (Licensing) Regulations.

We now enclose 1 no. original and 2 no. copies of the Article 12 Compliance Requirements in this regard as requested by the Agency.

We also attach a cheque from North Tipperary County Council in the sum of €2,539.48 as an additional payment to the application fee previously submitted to the Agency.

We are providing this information on behalf of North Tipperary County Council.

I trust this is satisfactory, but please do not hesitate to contact the undersigned if you have any queries.

Yours sincerely,

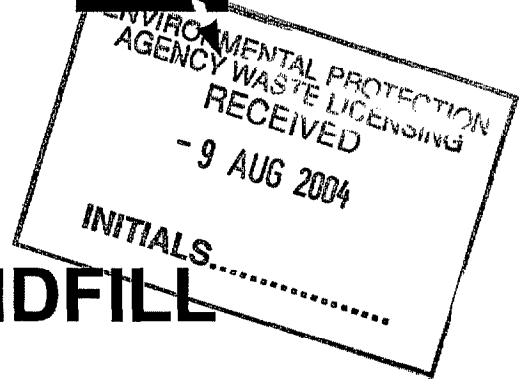
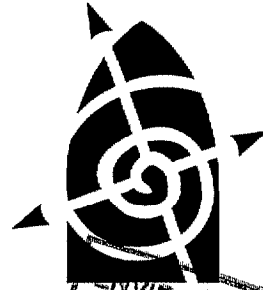


Siobhan Aherne
Senior Project Scientist
For RPS-MCOS Ltd.

sa/wm

Encl. 060504001RP0009F01

Comhairle Contae Thiobraid Árann Thuaidh
North Tipperary County Council



BALLAGHVENY LANDFILL

ARTICLE 12 COMPLIANCE REQUIREMENTS

WASTE LICENCE REVIEW APPLICATION

WASTE LICENCE 78-2

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August 2004





DOCUMENT CONTROL SHEET

Client	North Tipperary County Council					
Project Title	Ballaghveny Landfill Licence Compliance					
Document Title	Article 12 Compliance - Waste Licence Review Application					
Document No.	060504001RP00009F01					
This Document Comprises	DCS	TOC	Text	List of Tables	List of Figures	No. of Appendices
	1	1	13	1	0	2

Rev.	Status	Author(s)	Reviewed By	Approved By	Office of Origin	Issue Date
F01	Final	S. Ahern	A. Fahy	W. Madden	Galway	06/08/04

TABLE OF CONTENTS

NON TECHNICAL SUMMARY

1	INTRODUCTION	1
2.1	CLASSES OF WASTE DISPOSAL AND RECOVERY ACTIVITIES	2
2.3	WASTE TYPES AND QUANTITIES	3
4.5	REVISED RESTORATION PROFILE	4
4.7	ENVIRONMENTAL IMPACT	5
4.9	ENVIRONMENTAL CONTROL SYSTEMS	6
6.	RECOVERY OF CONSTRUCTION AND DEMOLITION WASTE.....	8

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LIST OF TABLES

Table E.1.1 Waste Types and Quantities

Table 1: Dust Deposition Results at Ballaghveny Landfill

Table E.1.3 Non-Hazardous Waste Types

Table E.1.4 Other Wastes

DRAWINGS

- DG0150-01 Site Location Map and Site Survey including Dust Monitoring Points
- DG0150-02 Proximity to Residences within 500m from Proposed C&D Waste Recovery Area
- DG0151-02 Proposed C&D Waste Recovery Area
- DG0152-01 Proposed Gas Management System
- DG0152-02 Existing and Proposed Leachate Management System

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APPENDICES

APPENDIX A REVISED TEXT AND FIGURES FROM VISUAL IMPACT ASSESSMENT BY MITCHELL & ASSOCIATES

APPENDIX B NOISE MONITORING RESULTS

LIST OF REVISED FIGURES AND DRAWINGS

Drawing/Figure Title	Drawing/Figure No.	Revision Status
Landscape Layout from Visual Impact Assessment by Mitchell & Associates contained in Appendix A	Figure 2A	A
Site Transects from Visual Impact Assessment by Mitchell & Associates contained in Appendix A	Figure 3A	A
Revised Landscape Layout with topographical survey in original Waste Licence Review application	DG0120-01	The landscape layout in this drawing has been revised in Figure 2A above.

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REVISED NON TECHNICAL SUMMARY

1. INTRODUCTION

On 3rd October 2003 RPS-MCOS on behalf of North Tipperary County Council informed the EPA of their intention to review Waste Licence 78-1 for Ballaghveny Landfill for an increase in post-settlement (restored) height of cells 3-5 from the currently approved 114mOD to 120mOD. On 22nd December 2003 the EPA notified that a full waste licence review application was not required and that an application should be made under the revised review process (as allowed for under Article 12(3(d) of the Waste Management (Licensing) Regulations, 2000 as amended).

This Waste Licence Review Application is prepared in accordance with the Agency's requirements as set out in their correspondence dated 22nd December 2003.

This Waste Licence Review Application also includes for the following:

- Proposal to amend Condition 5.12.3 of the current Waste Licence regarding acceptance of treated sludges at the landfill (Section 7).
- Proposal to accept 10,000 tonnes of Construction and Demolition (C&D) waste for recovery as per Condition 5.17.2 of the current Waste Licence (Section 6).

2. WASTE ACCEPTANCE

Ballaghveny Landfill is classed as a non-hazardous waste landfill. The Classes of Waste Disposal and Recovery Activities in accordance with the Third and Fourth Schedules of the Waste Management Act, 1996 as amended in S.I. 166, 1998 are outlined in Section 2.1 of the Waste Licence Review Application. The following waste types and quantities in Table E.1.1 are proposed to be accepted for disposal and recovery at Ballaghveny Landfill.

Table E.1.1 Waste Types and Quantities

WASTE TYPE	TONNES PER ANNUM	TOTAL (over life of site) tonnes
Household	22,000	
Commercial	10,000	
Sludge	3,500	
Construction and Demolition for disposal	1,500	
Construction and Demolition for recovery	10,000	
Industrial Non-Hazardous Liquids	-	
Industrial Non-Hazardous Sludges	-	
Industrial Non-Hazardous Solids	-	
Hazardous	-	
Total	47,000	

As part of this Waste Licence Review Application, it is proposed to accept 10,000 tonnes per annum of Construction and Demolition waste for recovery as per Condition 5.17.2 of the current Waste Licence.

A Waste Acceptance Procedure is in place at Ballaghveny Landfill which ensures that prohibited wastes will not be accepted in accordance with Articles 52 and 54 of Waste Management (Licensing) (Amendment) Regulations, 2002.

3. MANAGEMENT OF THE FACILITY

The site will be operated in accordance with best international practice for similar facilities. All the appropriate pollution prevention and control techniques are in place at the facility. An Environmental Management System (EMS) ensures that an effective system of management and a process of continuous improvement can be implemented.

4. VISUAL IMPACT ASSESSMENT

A visual impact assessment of the proposed increase in final restored height of the landfill has been prepared by Mitchell and Associates, Landscape Architects. Mitchell & Associates concluded that the overall visual impact will not be significant and neutral in that the restored landfill will be rehabilitated as a grassland and will be visually integrated with the surrounding landscape. They also concluded that the 6 metre increase in height will not be discernible from the three viewpoints outlined and therefore the impact of the proposed increase in height of the landfill will be slight and neutral. A slight impact is defined as "an impact which causes changes in the character of the environment which are not significant or profound." A neutral impact is defined as "a change that does not affect the quality of the environment."

The proposed increase in the final restored height of cells 1-5 will have no effect on the volume of surface water runoff generated. Environmental control systems are in place which will ensure that the impact on the environment will be not significant.

5. FINANCIAL PROVISION

North Tipperary County Council through the gate fee revenue can meet the costs associated with the operation and management of the landfill and confirm that there are sufficient funds available for future restoration and aftercare works at the facility.

6. RECOVERY OF CONSTRUCTION & DEMOLITION WASTE

North Tipperary County Council propose to accept 10,000 tonnes per annum of Construction and Demolition (C&D) waste for recovery as per Condition 5.17.2 of the current Waste Licence 78-1. Tables E.1.3 Non-Hazardous Waste Types and E.1.4 Other Wastes and the list of EWC Codes are outlined in Section 6 which is contained in the Article 12 compliance response to the EPA. The proposed layout will comprise three main areas: incoming waste stockpiling area, waste processing area with stockpiles of processed waste and residual waste storage area where skips for residual waste such as timber, plastic and metal will be located. The activity will involve the use of a mobile crusher, screens and the stockpiling of segregated materials.

Provision of this C&D waste recovery operation by North Tipperary County Council is in accordance with the recommendations of the Midlands Waste Management Plan. The Plan recommends that six locations in the Region be established for the recovery of C&D waste at existing or closed landfills with Nenagh recommended as one such location. Initially the local authority may use the crushed aggregate as raw material on development and infrastructural works and the surplus soil will be used for daily cover material, landfill remediation and restoration projects.

Ballaghveny Landfill is considered to be a suitable location for this C&D waste recovery operation for the following reasons:

- Current Waste Licence allows for the recovery of C&D waste as per Condition 5.17.2,
- Proximity to Nenagh Town,
- Site infrastructure is already provided at the landfill,

- The site is well screened from view and therefore will not cause a negative visual impact,
- Management and monitoring systems are in place at the landfill,
- The provision of this C&D waste recovery operation at Ballaghveny Landfill meets the requirements of the Midlands Waste Management Plan.

Drawing DG0150-02 shows the location of residences within 500m from the proposed C&D recovery area. The potential impacts of dust, noise and surface water runoff were assessed and it was concluded with the adequate control measures in place these potential impacts on the environment will not be significant.

7. TREATED SLUDGE FOR DISPOSAL

North Tipperary County Council propose to amend Condition 5.12.3 of the current Waste Licence which states that "from 1 January, 2004, only treated sludges shall be accepted at the facility". North Tipperary County Council request that this date be extended to 1 January 2005 to allow for the proposed improvement works at Thurles Sewerage Scheme.

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ARTICLE 12 COMPLIANCE REQUIREMENTS

1. INTRODUCTION

The applicant has submitted €12,697.38 for disposal of waste where the annual intake is less than 40,000 tonnes per annum. Ensure that the appropriate application fee in relation to the waste disposal activities concerned has been submitted (see question below in Section 2.3 Waste Types and Quantities). The fees, which are required to accompany waste licence applications, are set out in the Third Schedule of the Waste Management (Licensing) Regulations, 2000 (SI 185/2000).

As the proposed total annual intake at the landfill is 47,000 tonnes the total amount payable is €19,046.07 (€15,236.86 plus €3,809.21 for recovery activities) in accordance with the Third Schedule of the Waste Management Licensing Regulations, 2000 (S.I. 185 of 2000). An amount of €16,506.59 has been previously submitted to the Agency as part of the original Review Application. The required additional fee of €2,539.48 now accompanies this reply. It was also advised by the Agency that a refund of the total fees paid can be requested by North Tipperary County Council following the final issue of the Waste Licence since this application is considered to be a partial review of the existing Waste Licence.

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2.1 CLASSES OF WASTE DISPOSAL AND RECOVERY ACTIVITIES

Provide a detailed description of the activities of the Third and Fourth Schedule of the Waste Management Act, 1996 to 2003 to be carried out at the facility.

The following provides a detailed description of the activities of the Third and Fourth Schedules of the Waste Management Act, 1996 as amended by S.I. 166, 1998 be carried out at the facility:

The principle activity carried out on the site is Class 5 of the Third Schedule.

Third Schedule (Waste Disposal Activities)

- Class 1** This describes the activity carried out at the landfill- landfill disposal of waste.
- Class 2** This activity allows for the disposal of industrial sludge, water treatment sludge and sewage sludge at the landfill.
- Class 4** This activity describes the storage of leachate pending its disposal at another appropriate facility. It also relates to the disposal of industrial sludge, water treatment sludge and sewage sludge at the landfill.
- Class 5** This describes the principal activity carried out at the site.
- Class 11** This activity relates to the mixing of sewage sludge or construction/demolition waste with other material prior to landfilling.
- Class 12** This activity allows for repackaging of waste accepted at the civic amenity site and the dispatch of unacceptable wastes to alternative disposal facilities.
- Class 13** This activity allows for recycling/recovery activities and the temporary storage of unacceptable wastes in the waste quarantine area and for use in development and/or restoration purposes.

Fourth Schedule (Waste Recovery Activities)

- Class 2** This activity allows for the recovery/recycling of organic materials including paper.
- Class 3** This activity relates to the recycling or reclamation of metals or metal compounds.
- Class 4** This activity allows for the use of inert materials for landfill reclamation and for recycling or reclamation of inorganic materials.
- Class 10** This activity allows for the use of recovered materials in the restoration of the facility.
- Class 11** This activity allows for the use of inert construction/demolition waste for landfill restoration.
- Class 13** This activity allows for recycling/recovery activities and the temporary storage of unacceptable wastes in the waste quarantine area and for use in development and/or restoration purposes.

2.3 WASTE TYPES AND QUANTITIES

Verify that the proposed total annual waste quantity is 37,000 tonnes per annum as the current licence (WL 78-1) even though the applicant has proposed an increase in construction and demolition waste to be accepted at the facility from 1,500 to 10,000 tonnes per annum. Complete Table E.1.1 Waste Types and Quantities of the application form.

The following waste types and quantities in Table E.1.1 are proposed to be accepted for disposal and recovery at Ballaghveny Landfill.

Table E.1.1 Waste Types and Quantities

WASTE TYPE	TONNES PER ANNUM	TOTAL (over life of site) tonnes
Household	22,000	
Commercial	10,000	
Sludge	3,500	
Construction and Demolition for disposal	1,500	
Construction and Demolition for recovery	10,000	
Industrial Non-Hazardous Liquids	-	
Industrial Non-Hazardous Sludges	-	
Industrial Non-Hazardous Solids	-	
Hazardous	-	
Total	47,000	

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4.5 REVISED RESTORATION PROFILE

Provide the restoration and aftercare plan as referred to in Section 4.5 Revised Restoration Profile

The Restoration and Aftercare Plan is currently under review and will be forwarded to the Agency as soon as it is available.

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4.7 ENVIRONMENTAL IMPACT

Clarify the discrepancy between the statement in Section 4.7 Environmental Impact “Mitchell & Associates concluded that the overall visual impact will not be significant and neutral.....” with the statement in the actual report by Mitchell and Associates, Landscape Architects (contained in Appendix C) stating “in the case of all three view points the overall visual impact is significant and neutral.”

The statement in the actual report by Mitchell and Associates, Landscape Architects contains a typing error and the correct statement is as follows:

“In the case of all three viewpoints the overall visual impact is **insignificant** and neutral.....”.

The corrected text and a fax from Mitchell & Associates confirming this amendment is contained in Appendix A.

We also inform the Agency that Figures 2 and 3 of the Visual Impact Assessment prepared by Mitchell & Associates have been updated and contours revised to correlate with the proposed final design levels included in the proposed restoration works contract for Cells 1-5. These revised figures also indicate the proposed final contour levels for the remaining Cells 6-8 and future cells 9-11 where the maximum height of 114mOD is not exceeded. The revised figures are included in Appendix A.

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4.9 ENVIRONMENTAL CONTROL SYSTEMS

1. Provide more details on the proposed landfill gas management system at the facility include a drawing showing the location of the flare, gas extraction wells and the perimeter gas monitoring boreholes.

Drawing No. DG0152-01 provides details on the proposed landfill gas management system and locations of perimeter gas migration monitoring boreholes.

It is proposed to provide a landfill gas management system at Ballaghveny Landfill consisting of gas extraction wells connected to a gas flare unit which has been purchased by North Tipperary County Council and located on site. This system will be installed once the restoration works in cells 1-5 are completed since the collection pipework is to be laid within the capping system. Cells 1-5 will be connected to the proposed gas management system. Cells 6-8 and future cells 9-11 will be connected to the gas management system following phased restoration.

Currently gas monitoring boreholes are in place at the perimeter of the landfill to monitor the risk of gas migration beyond the site boundary.

Gas wells will be placed at 40m centres where possible and the pipework shall be installed prior to the laying of subsoil and topsoil in the capping programme. The wells shall be connected to a manifold whereby the gas shall be pumped to the flare. Gas extraction wells will not be placed within 25m of the edge of the capping to ensure integrity of the capping system. The proposed gas management system will be forwarded to the Agency for approval prior to commencement of the works as required in the current Waste Licence 78-1.

2. Provide more details on the proposed leachate collection system at the facility include a drawing showing the location of existing and proposed leachate lagoon, the associated pipe works and the existing and proposed leachate monitoring/ extraction boreholes.

Drawing No. DG0152-02 provides details on the leachate management system (existing and proposed) at Ballaghveny Landfill.

Existing Leachate Management System

A total of 9 no. leachate monitoring/extraction boreholes have been installed within Cells 1-5 as required by the Waste Licence for the extraction of leachate from the waste body. Currently leachate is extracted from Cells 1-5 to the leachate lagoon located adjacent to the cells. Leachate is also collected from Cells 6-8 to the lagoon located at the northern end of the site. Leachate is tankered from both lagoons to Nenagh WWTP for final treatment.

Proposed Leachate Management System

The proposed restoration works contract includes for the decommissioning of the lagoon adjacent to Cells 1-5 and replacing it with a pumping/collection chamber and connecting to the lagoon constructed to the north of Cells 6-8. A leachate rising main will transfer the collected leachate from the new pumping/collection chamber to the lagoon north of Cells 6-8. Leachate collected and stored in the lagoon will then be tankered to Nenagh WWTP. Leachate will continue to be extracted from Cells 1 and 2 to the new pumping/collection chamber and pumped via the rising main to the lagoon. A

telemetry control system is also proposed to monitor leachate levels within the landfill and the lagoon and to provide a control to the leachate management system. Future Cells 9-11 will also be connected to the leachate management system when operational.

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6. RECOVERY OF CONSTRUCTION AND DEMOLITION WASTE

1. Provide details on emissions (dust, noise, surface water run-off etc.) in relation to the proposed processing of construction and demolition waste to be carried out at the facility. Include an assessment of the environmental impact of the emissions from the recovery of construction and demolition waste as well as any proposed mitigation measures.

Dust

Table 1 below presents some typical dust monitoring results for Ballaghveny Landfill. DSP4 is the nearest monitoring location to the proposed C&D waste recovery area (Drawing No. DG0150-01). The standard emission limit of 350 mg/m²/day is not exceeded at any of the four locations. Therefore the existing landfill is not having a negative impact on the surrounding air quality. The dust monitoring programme at the facility will be extended to include this proposed area for recovery of C&D waste.

Table 1: Dust Deposition Results at Ballaghveny Landfill

Dust Monitoring Point	August 2003 mg/m ² /day	November 2003 mg/m ² /day
DSP1	2.27	1.59
DSP2	No result	218.00
DSP3	22.68	29.71
DSP4	15.88	10.61

Emissions of dust will occur from the traffic travelling to and from the proposed C&D recovery area and within the facility and from the recycling process of crushing the C&D Waste. Dust emissions will be infrequent being mainly associated with the crushing of recycled materials which will only occur when sufficient waste is available for processing (probably on a quarterly basis).

There will be no odour from the waste accepted as it is inert in nature which is defined as: "waste that does not undergo any significant physical, chemical or biological transformations".

The exhaust emissions from the traffic and the machinery will be minimal.

The measures to control and reduce dust emissions include the following:

- Regular sweeping will control the amount of dust generated.
- The surrounding trees will attenuate the dust generated from the proposed facility.
- A mobile water sprayer will be employed during dry weather conditions to reduce dust emissions.
- All trucks departing from the site will pass through the wheelwash, which shall be maintained with the silt removed on a regular basis.
- Mobile plant equipment used on site will be regularly maintained to prevent excessive exhaust emissions of particulates and other pollutants
- The mobile crusher will be adapted with covers and screens to reduce the amount of dust being emitted into the atmosphere.
- Regular dust monitoring will indicate if the levels are exceeding the standard limits.

With the implementation of the dust measures outlined above, emissions of dust will be adequately controlled. Overall, dust emissions are predicted to be slight.

Noise

Appendix B provides details on the noise monitoring at the existing landfill facility. The noise monitoring programme at the facility will be extended to include this proposed area for the recovery of C&D waste. The results show that noise at the existing landfill is not causing a significant impact as all noise levels are within the standard levels.

The C&D waste recovery operation will not operate outside the normal working hours of the landfill which are as follows:

Monday-Friday	08.30-17.00
Saturday	08.30-16.00

The two main sources of noise at the proposed facility will originate from the recycling plant and the traffic generated. The recycling equipment will consist of a mobile crusher with screens and a loading shovel. Waste will be accepted during the above hours however recycling operations will be carried out on an occasional basis and only when sufficient waste is available for processing (probably on a quarterly basis). Therefore the crusher will only operate on an infrequent basis and the noise emissions will not be constant. The impact of traffic will be minimal and therefore the additional noise generated will also not be significant. No vibrations will result from operations at the proposed facility.

The nearest occupied residences are located 360m southwest of the proposed C&D recovery area, residence nos. 3 & 4 on Drawing No. DG0150-02. At this distance the impact on the residences will not be significant. These noise sensitive locations will also be included in the noise monitoring programme. NSL1 and NSL2 already monitor the noise in the vicinity of residences to the east and south of the landfill.

Regular monitoring of noise will indicate if the levels are exceeding the standard limits.

Surface Water Run-Off

Suspended solids can impact negatively on the aquatic flora and fauna by reducing light penetration in surface waters and interfere with aquatic plant life and may affect fish life.

The following mitigation measures will ensure that no contamination of surface waters will result:

- Non-hazardous, inert C&D waste will only be accepted and control measures at the proposed facility will ensure this.
- Baseline and continuous monitoring will be carried out as required by the EPA.

2. Specify the location for construction and demolition waste stockpiles as well as the location for storage of residual material such as timber and metals as referred to in Section 6.2 Recycling Process. If applicable include the drainage arrangement for these waste storage areas.

Drawing No. DG0151-01 provides details on the layout of the proposed C&D waste recovery area. The proposed layout will comprise three main areas: incoming waste stockpiling area, waste processing area with stockpiles of processed waste and residual waste storage area where skips for residual waste such as timber, plastic and metal will be located.

3. Details types of construction and demolition waste to be accepted at the facility. Complete Tables E.1.3 Non-Hazardous Waste Types and E.1.4 Other Wastes of the application form, including EWC Codes for the proposed types of construction and demolition waste.

The following Tables E.1.3 Non-Hazardous Waste Types and E.1.4 Other Wastes and list of EWC Codes provide details the types of construction and demolition waste to be accepted at the facility.

TABLE E.1.3 NON-HAZARDOUS WASTE TYPES

INERT OR INACTIVE WASTE	Check (if accepted)	Additional Information
Subsoil	<input checked="" type="checkbox"/>	
Topsoil	<input checked="" type="checkbox"/>	
Brickwork	<input checked="" type="checkbox"/>	
Stone, Rock and Slate	<input checked="" type="checkbox"/>	
Clay	<input checked="" type="checkbox"/>	
Natural Sand	<input checked="" type="checkbox"/>	
Concrete	<input checked="" type="checkbox"/>	
Pottery & China	<input checked="" type="checkbox"/>	
Solid Road Planings, Tarmacadam, Solid Asphalt	<input checked="" type="checkbox"/>	
BIODEGRADABLE WASTE	Check (if accepted)	Additional Information
Wood & Wood Products	<input checked="" type="checkbox"/>	
Paper & Paper Products	<input type="checkbox"/>	
Vegetable Matter	<input type="checkbox"/>	
Non-Infectious Health-Care Waste	<input type="checkbox"/>	
Natural & Manmade Fibres	<input type="checkbox"/>	

Road Sweepings	<input type="checkbox"/>	
Gully Emptyings	<input type="checkbox"/>	
Septic Tank Waste	<input type="checkbox"/>	
Silt & Dredgings	<input type="checkbox"/>	
Ash & Cinders	<input type="checkbox"/>	
Food Stuffs	<input type="checkbox"/>	
Oil/Water Mixtures	<input type="checkbox"/>	
Vegetable Oil	<input type="checkbox"/>	
Fats, Waxes and Greases	<input type="checkbox"/>	
Animal Excrement (including paunch contents)	<input type="checkbox"/>	
Animal Blood	<input type="checkbox"/>	

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TABLE E.1.4 OTHER WASTES

OTHER WASTES	Check (if accepted)	Additional Information
Plasterboard and Plaster	<input checked="" type="checkbox"/>	
Dried Paints, Dried Varnish & Dried Lacquer	<input type="checkbox"/>	
Foundry Sand & Sand Blasting Residues	<input type="checkbox"/>	
Glass	<input checked="" type="checkbox"/>	
Latex & Rubber Solutions	<input type="checkbox"/>	
Solid, Fully Polymerised Plastics	<input type="checkbox"/>	
Solid Rubber (excluding tyres)	<input type="checkbox"/>	
Empty Containers	<input type="checkbox"/>	
Non-Hazardous Ferrous and Non-Ferrous Metals	<input checked="" type="checkbox"/>	
OTHER WASTES (APPLICANT TO SPECIFY)	Check (if accepted)	Additional Information
Plastics	<input checked="" type="checkbox"/>	

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List of EWC Codes for C&D Waste Acceptance

- 17 01 01 concrete
- 17 01 02 bricks
- 17 01 03 tiles and ceramics
- 17 01 07 mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06

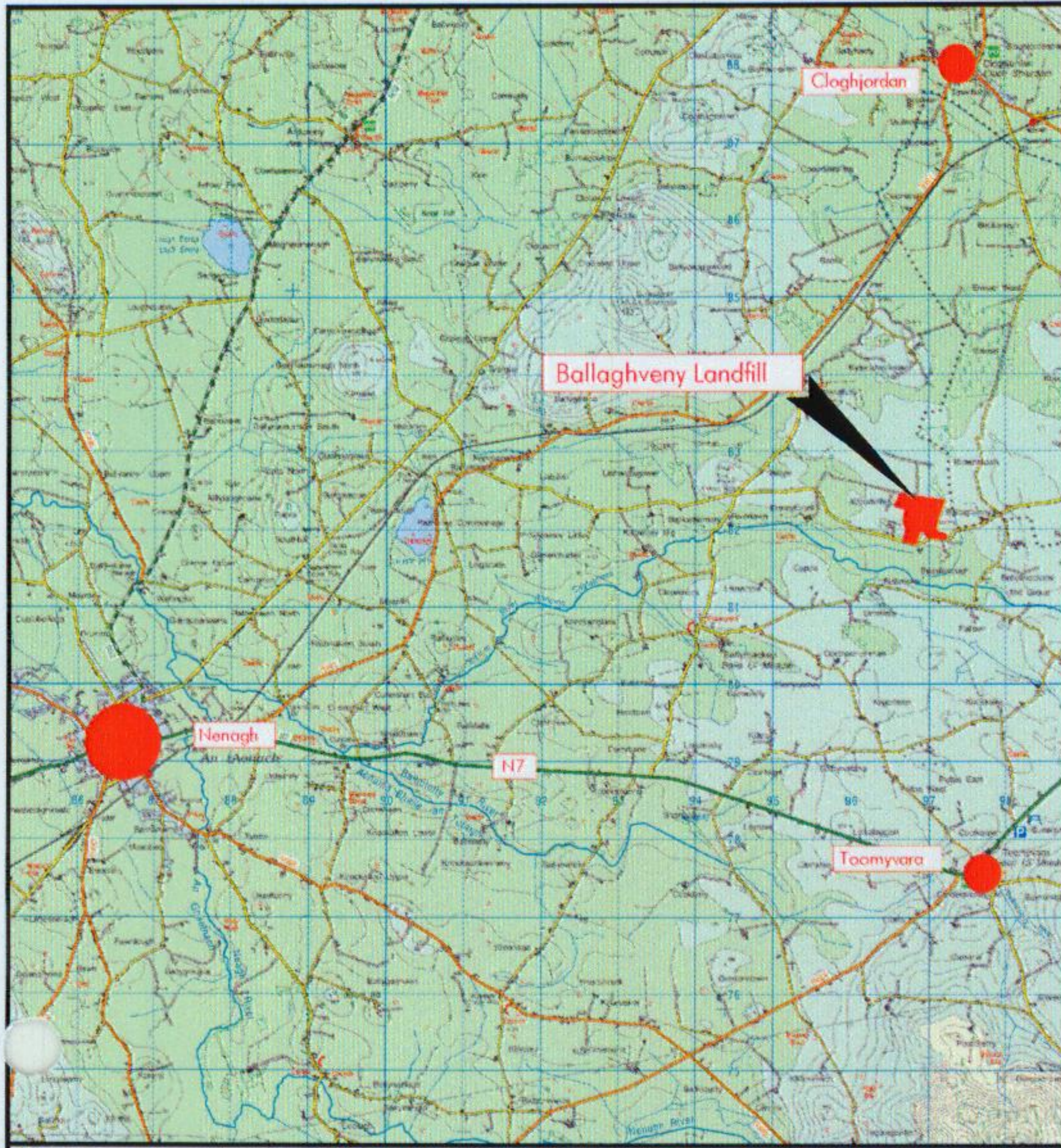
17 02 01	wood
17 02 02	glass
17 02 03	plastic
17 04 01	copper, bronze, brass
17 04 02	aluminium
17 04 03	lead
17 04 04	zinc
17 04 05	iron and steel
17 04 06	tin
17 04 07	mixed metals
17 04 11	cables other than those mentioned in 17 04 10
17 05 04	soil and stones other than those mentioned in 17 05 03
17 05 06	dredging spoil other than those mentioned 17 05 05
17 05 08	track ballast other than those mentioned in 17 05 07
17 06 04	Insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02, 17 09 03.

4. Specify the distance to the nearest residential dwelling to the construction and demolition waste recovery area include a drawing showing occupied residences within 500m of the site boundary.

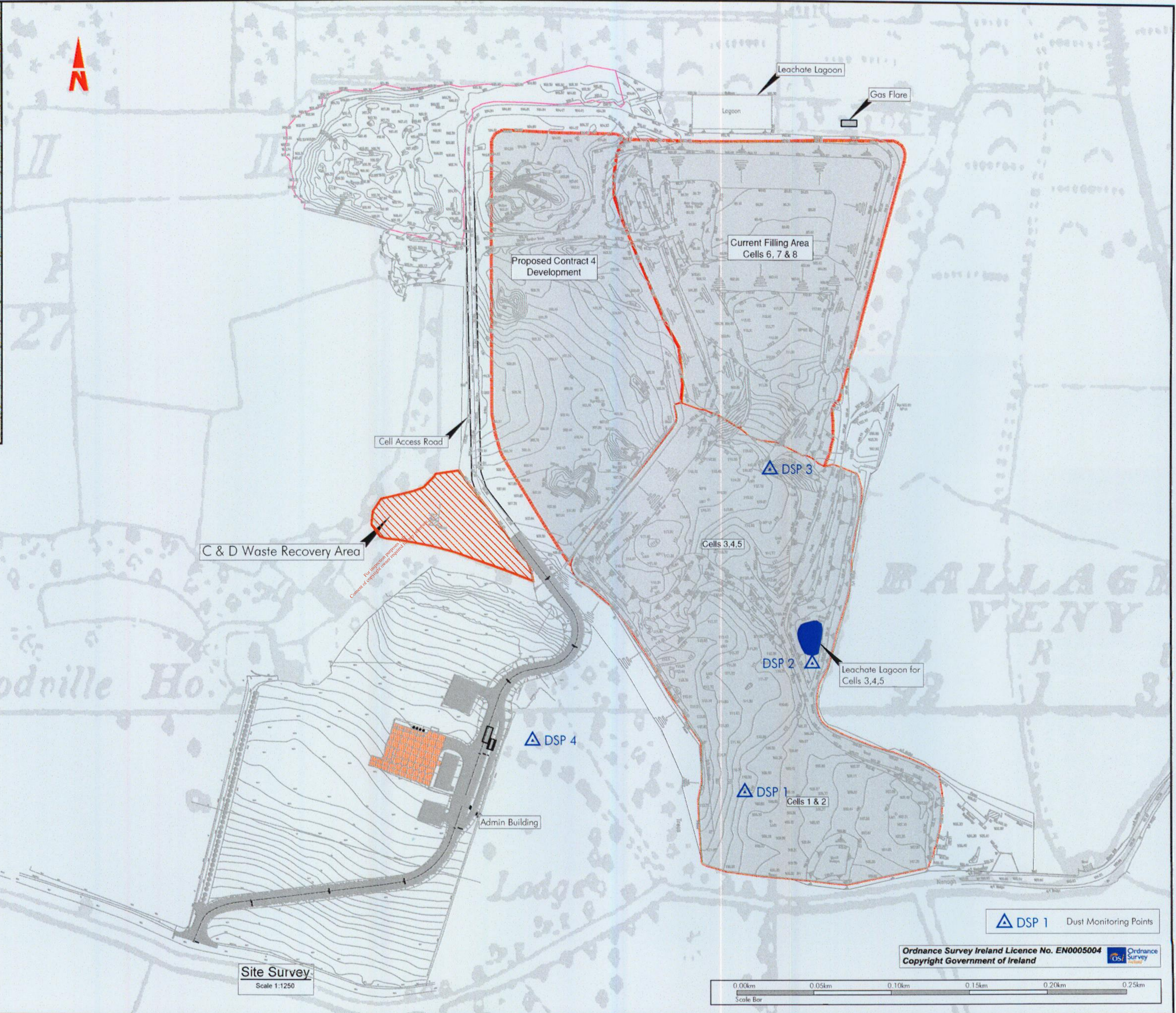
Drawing No. DG0150-02 provides details on the location of occupied dwellings within 500m of the site boundary in relation to the construction and demolition waste recovery area. The distance to the nearest occupied dwelling house is 360m. Section 6 above discusses the potential impacts of the proposed C&D recovery area on these residences and recommends mitigation measures.

DRAWINGS

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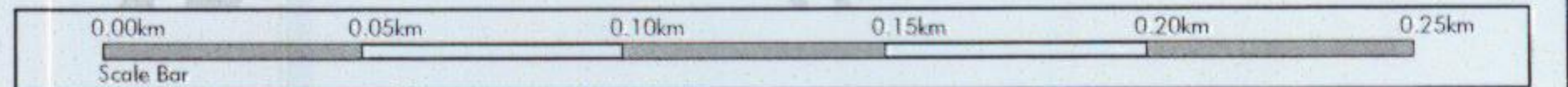
Site Location Map
Not to Scale



Site Survey
Scale 1:1250

△ DSP 1 Dust Monitoring Points

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- NOTES**
1. This drawing is the property of RPS-MCOS Ltd., it is a confidential document and must not be copied, used, or its content divulged without prior written consent.
 2. All Levels refer to Ordnance Survey Datum, Malin Head.
 3. DO NOT SCALE. use figured dimensions only, if in doubt ask.

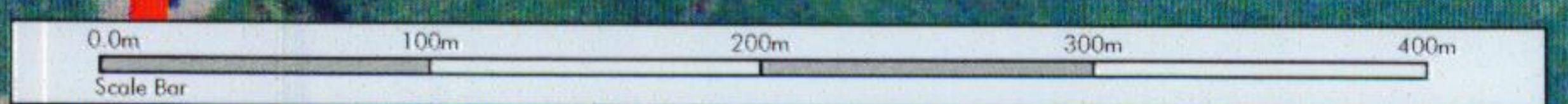
No.	Date	App.	Amendment / Issue	App.
F01	5/06/04	W.M.	Final Issue	W.M.



Drawn by:	C.N.	Job No:	060504001
Checked by:	S.A.	File No:	060504001DG0150
Approved by:	W.M.	Drg. No:	
Scale:	1:1250		
Date:	Jul '04	DG0150-01	F01



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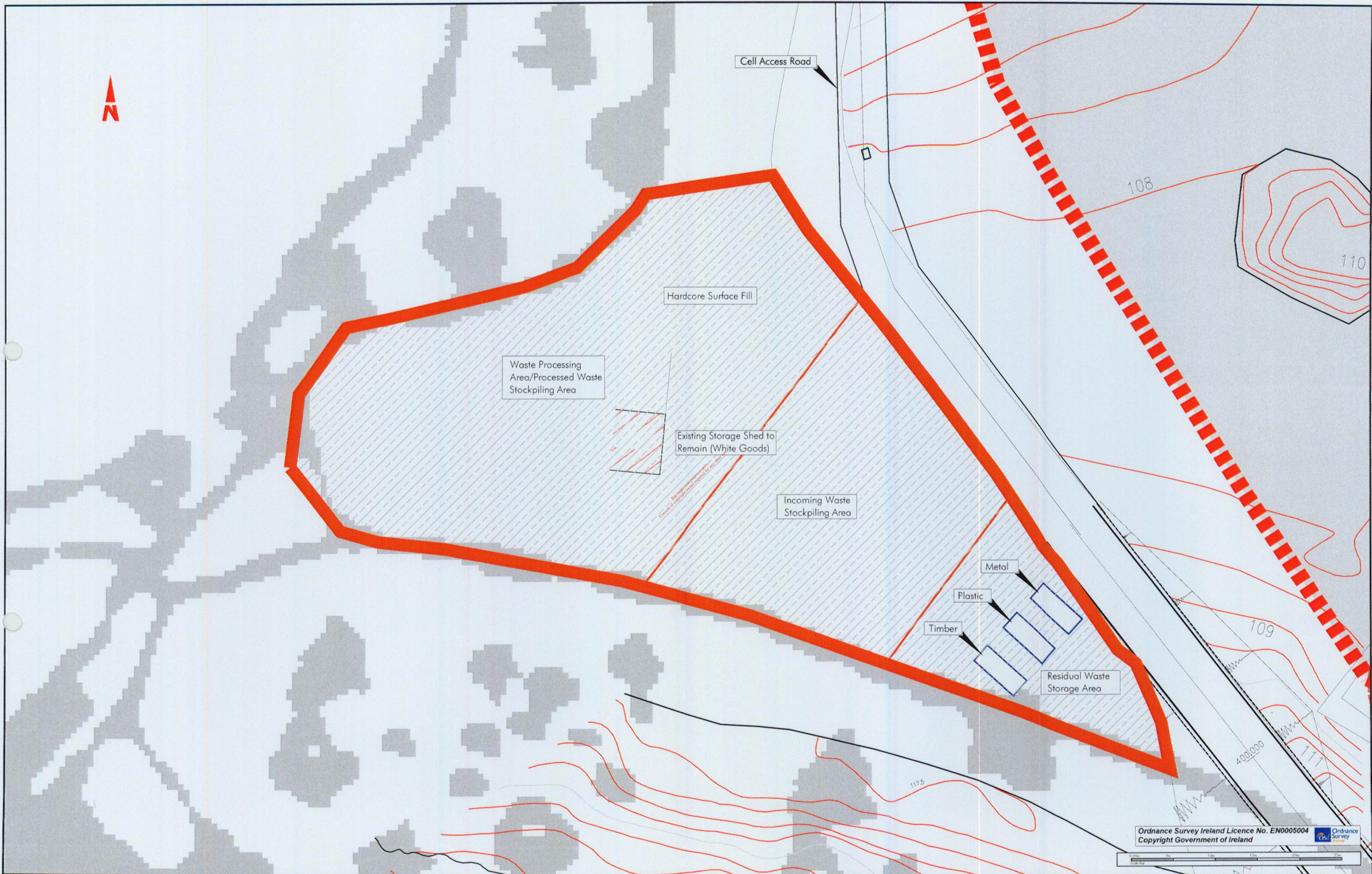
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No.	Date	Amendment / Issue	App.
F01	5/08/04	Final Issue	W.M.

**Ballaghveny Landfill-
Waste Licence
Compliance**

Title: **Proximity To
Residences Within 500m
From Proposed
C&D Waste Recovery Area**

Drawn by:	C.N.	Job No:	060504001
Checked by:	S.A.	File No:	060504001DG0150
Approved by:	W.M.	Drg. No:	Rev:
Scale:	1:2000	DG0150-02	F01
Date:	Jul. '04		



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No.	Date	Amendment / Issue	App.
F01	5/08/04	Final Issue	W.M.

No.	Date	Amendment / Issue	App.

Ballaghveny Landfill-
Waste Licence
Compliance

Title:
**Proposed
C & D Waste Recovery Area**

Drawn by:	C.N.	Job No:	060504001
Checked by:	S.A.	File No:	060504001DG0151
Approved by:	W.M.	Drg. No:	Rev:
Scale:	1:200 @ A1	DG0151-01	F01
Date:	Jul '04		

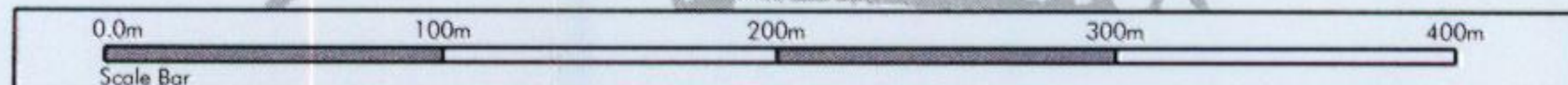


Note:
Gas extraction wells and connecting pipework to be Designed and provided following final capping of Cells 1 - 5

LEGEND
● MP 00 Perimeter Gas Monitoring Boreholes

Landfill Gas Monitoring Points		
Point ID	Eastings	Northings
MP 2	196997.353	182361.999
MP 3	196883.754	182017.25
MP 4	196958.702	181926.926
MP 6	196635.288	182344.196
MP 7	196645.647	182279.134
MP 8	196614.041	182163.582
MP 10	197059.030	182141.466
MP 12	197052.341	182104.486
MP 13	197080.348	182057.682
MP 15	197272.596	181839.335
MP 16	197056.735	181661.865
MP 17	197288.220	181907.165
MP 18	197146.173	182333.275
MP 19	197136.189	182183.235
MP 20	197089.962	182045.080

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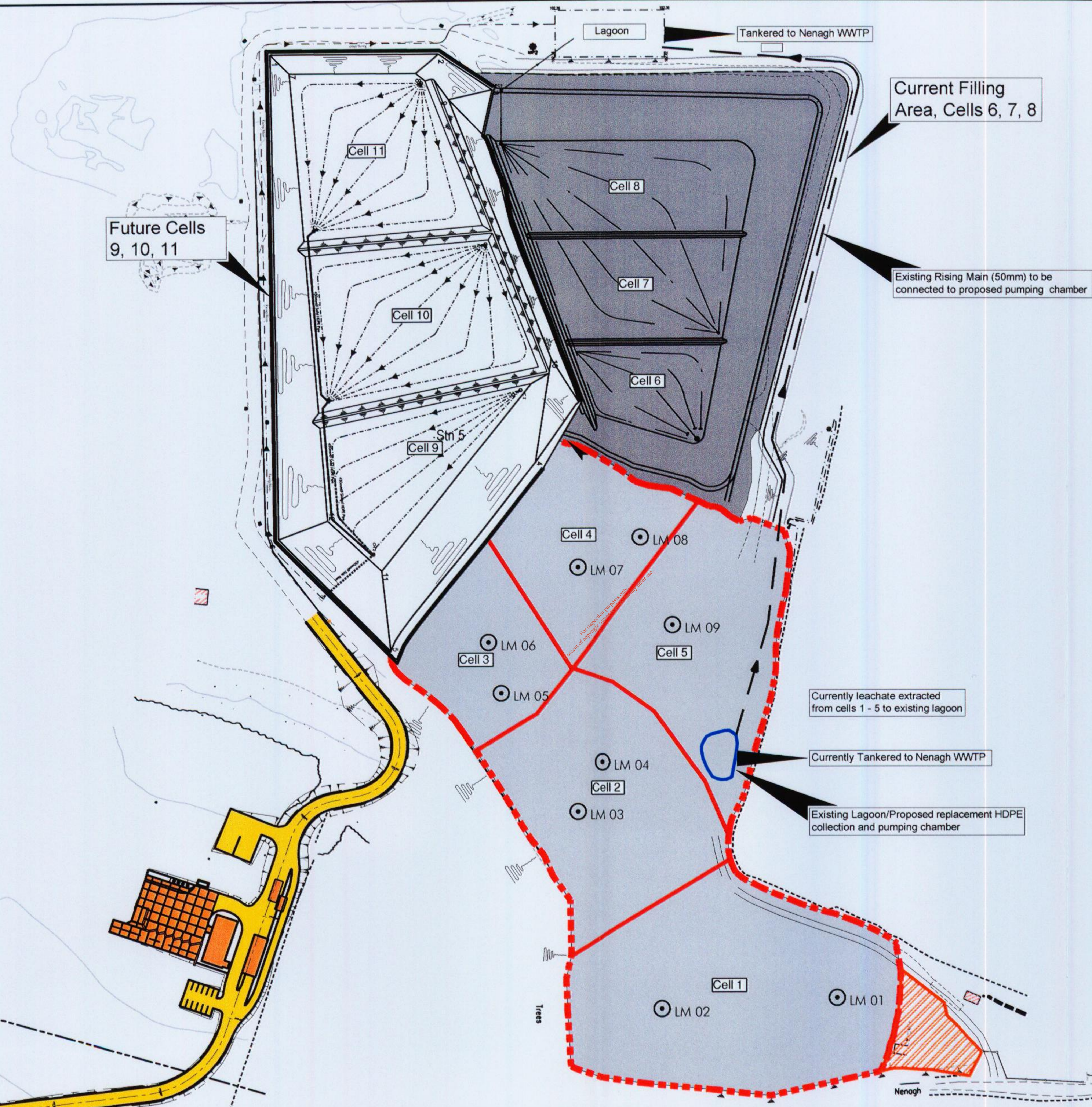
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No.	Date	Amendment / Issue	App.
F01	5/8/04	Final Issue	W.M.

Ballaghveny Landfill-
Waste Licence
Compliance

Title
**Proposed Gas
Management System**

Drawn by:	A.D.	Job No:	060504001
Checked by:	S.A.	File No:	060504001DG0152
Approved by:	W.M.	Drw. No:	
Scale:	1:2000 @ A1		
Date:	Jul '04		
		DG0152-01	F01



Current Filling Area, Cells 6, 7, 8

Future Cells 9, 10, 11

Existing Rising Main (50mm) to be connected to proposed pumping chamber

Currently leachate extracted from cells 1 - 5 to existing lagoon

Currently Tankered to Nenagh WWTP

Existing Lagoon/Proposed replacement HDPE collection and pumping chamber

LEGEND

● LM 00 Leachate Extraction & Monitoring Point

Leachate Extraction & Monitoring Points

Point ID	Easting	Northing
LM 01	197104.656	181918.062
LM 02	197058.842	181913.236
LM 03	197018.321	182005.460
LM 04	197030.485	182028.511
LM 05	196982.074	182060.842
LM 06	196976.093	182084.696
LM 07	197018.732	182119.212
LM 08	197048.194	182133.836
LM 09	197063.816	182092.053

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North Tipperary County Council

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No.	Date	Amendment / Issue	App.
F01	5/06/04	Final Issue	W.M.

Ballaghveny Landfill-
Waste Licence
Compliance

Title: Existing & Proposed
Leachate Management System

Drawn by:	C.N.	Job No:	060504001
Checked by:	S.A.	File No:	060504001DG0152
Approved by:	W.M.	Org. No:	
Scale:	1:1000 @ A1	Rev:	
Date:	Jan'04		
		DG0152-02	F01

APPENDIX A

**REVISED TEXT AND FIGURES FROM VISUAL IMPACT
ASSESSMENT BY MITCHELL AND ASSOCIATES**

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Ballaghveny Landfill – Cell Height Increase Visual Assessment

Impact and Mitigation

The further extension of the landfill at Ballaghveny will increase the height from 114m O. D., as permitted by the waste licence, to a final capped height of 120m O.D. This further extension will form a mound shaped so as to mimic a natural landform and running in a south to north direction from the existing landfill.

The increase in height of 6.0 metres over that currently permitted to a finished level of 120m O.D. will have a slight neutral visual impact in the landscape. Given the scale and swoop of the surrounding agricultural landscape, an increase of this amount will not be discernible to the eye.

The grading and re-vegetating of the resulting landform will constitute a significant improvement, in environmental terms, on the existing situation.

(see Fig. 2)

Views No's. 1, 2 and 3 looking north west from house No. 1 and house no. 2 indicate the existing and future condition of the landfill site when raised to a final level of 120m O.D.

In the case of all three viewpoints the overall visual impact is insignificant and neutral, in that the capped landfill will be rehabilitated as a grassland, and will be visually integrated with the surrounding agricultural landscape.

The 6 metre increase in height will not be discernible from these viewpoints – therefore the visual impact of this new extension will be slight and neutral. The landfill is totally screened from views in from Bessborough House.



Fig. 2A - LANDSCAPE LAYOUT

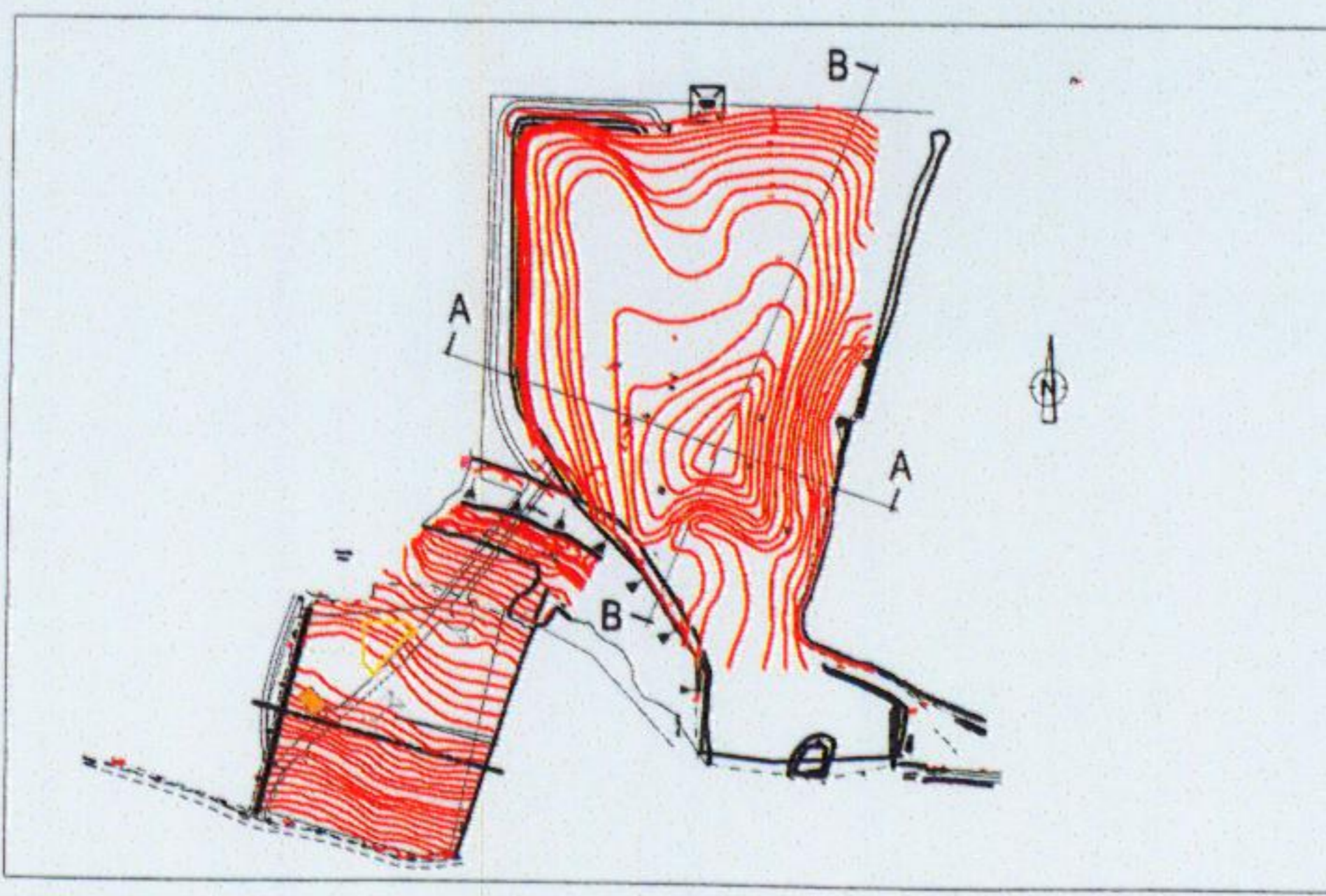
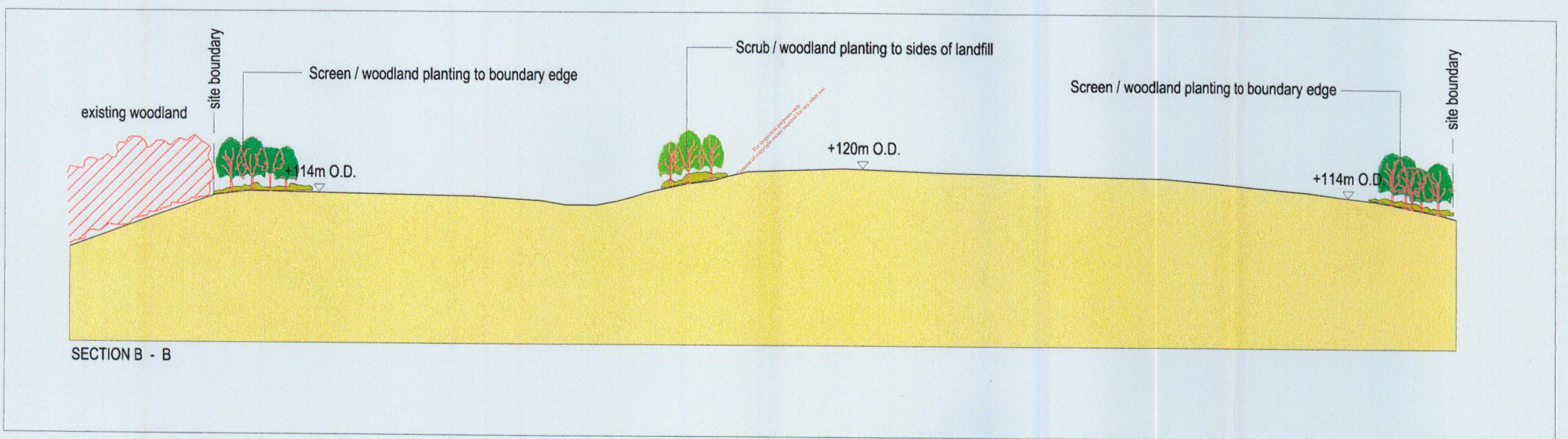
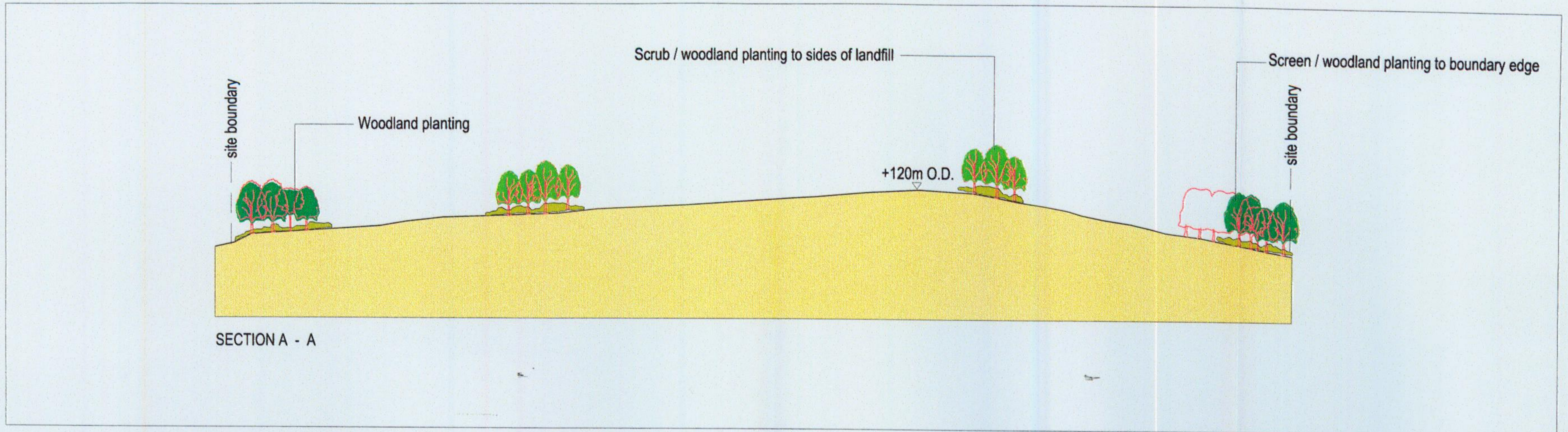


Fig. 3A - SITE TRANSECTS

MITCHELL ASSOCIATES

Landscape Architects, Master Planners, Town Planners

M. C. O'Sullivan
Galway

15 September 2003

Att: Willie Madden

Re: **Ballaghvany Landfill - North Tipperary**

Dear Willie,

Following our telephone conversation I wish to confirm that the word 'significant' in our 'Visual Report' should have read 'insignificant'.

Also regarding your query on the terms 'slight' and 'neutral', these are descriptions referred to from the EPA Guidelines and are described as follows:

'Slight'

An impact which causes changes in the character of the environment which are not significant or profound.

'Neutral'

Represents a change which does not affect the quality of the environment.

I have also arranged for Modelworks to show heights of 114m O.D. and 120m O.D. on their photomontage images.

They will forward these to you directly in the morning

Yours sincerely



Colin Carroll

Mitchell + Associates

INCOS

Mr. J. K. K. K.	Mr. J. K. K. K.
Mr. W. Madden	Mr. W. Madden
Mr. W. Madden	Mr. W. Madden
3	
15 SEP 2003	
Return to	

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registered in Ireland no. 261715
V.A.T. no. IE 8261/15V

APPENDIX B
NOISE MONITORING RESULTS

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ENVIRONMENTAL NOISE SURVEY

BALLAGHVENY LANDFILL



June 2003

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ANV Technology, Ennis. Tel 065 6868638 Fax 065 6823490 e-mail anv@anvtech.com

**ENVIRONMENTAL NOISE SURVEY 2003
BALLAGHVENY LANDFILL**

SUMMARY

A daytime environmental noise survey was carried out at Ballaghveny Landfill, on the 6th June, 2003. The aim of the survey was to determine ambient noise levels at the Landfill Boundary and at Noise Sensitive Locations (NSL) 1 and 2, and to assess compliance with the limits of the Landfills' EPA Licence (Licence No.78-1).

Daytime noise levels due to the landfill at the boundary locations and the noise sensitive locations were within the EPA daytime limit of 55dB(A). The daytime noise levels at the landfill boundaries and at NSL1 were lower than in the 2002 survey. This was due to the fact that the landfill activity is currently taking place in a location further away from boundary positions B1, B2 and B4 and NSL1. Noise from the landfill was not audible at NSL2.

**Environmental Noise Survey
Ballaghveny Landfill, Ballymackey.**

CONTENTS

1 INTRODUCTION.....1

2 METHODOLOGY.....1

3 MEASUREMENT LOCATIONS.....2

4 RESULTS.....4

5. ASSESSMENT OF COMPLIANCE WITH LICENCE LIMITS.....5

APPENDIX 1. MEASUREMENT DETAILS6

APPENDIX 2. TERMINOLOGY.....7

APPENDIX 3. NOISE SPECTRA (THIRD-OCTAVE).....8

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ANV Technology, Ennis. Tel 065 6868638 Fax 065 6823490 e-mail anv@anvtech.com

Environmental Noise Survey 2003 Ballaghveny Landfill, Ballymackey

1 INTRODUCTION

This environmental noise survey was commissioned by North Tipperary County Council. The scope of the work was to measure daytime noise levels due to Ballaghveny Landfill operations at boundary locations and noise sensitive locations (NSL's), and to comment on compliance with the EPA licence daytime noise limits of 55 dB(A). The general survey methodology follows ISO 1996 "Description and measurement of environmental noise".

2 METHODOLOGY

The measurement parameters L_{Aeq} , L_{A90} and L_{A10} are reported for all locations. In addition, the *specific noise levels* were determined for each measurement position. The specific noise level is the component of the ambient noise that can be attributed to a specific source, i.e. Ballaghveny Landfill. The method of assessing the specific noise level is summarised in Table 1. Further details on the noise survey are included in Appendix 1.

Table 1 Noise parameters used for estimating plant specific noise level

Description of Noise	Parameter best representing specific noise
Specific noise source dominant, no other significant noise sources	L_{Aeq}
Intermittent interfering noise (e.g. traffic/wind noise, animals) with underlying specific noise audible	L_{A90} if plant clearly audible or $< L_{A90}$ if not clearly audible
Almost continuous interfering noise (e.g. traffic/wind noise, animals), with specific noise occasionally barely audible	L_{AF} observed in traffic lulls

3 MEASUREMENT LOCATIONS

Four boundary measurement locations and two noise sensitive locations (NSL) were surveyed as required in the EPA licence. These locations are the same as in the 2002 survey.

The location map in Figure 1 shows the boundary positions and noise sensitive locations.

- Boundary Location (B1): Located on the old landfill access road towards the south-eastern corner of the site near the lagoon;
- Boundary Location (B2): Located on the old landfill access road towards the northeastern side of the landfill. The position is situated approximately 5m below road level;
- Boundary Location 3 (B3): Located at the highest point of the landfill approximately 50 meters from the new access road;
- Boundary Location 4: (B4): Located at the southern corner of the landfill approximately 5m from the main road outside the landfill;
- Noise Sensitive Location (NSL1): Located at a house approximately 500m from the site entrance in the direction away from Nenagh;
- Noise Sensitive Location (NSL2): Located at the entrance to a house approximately 100m from the site entrance in the direction away from Nenagh.

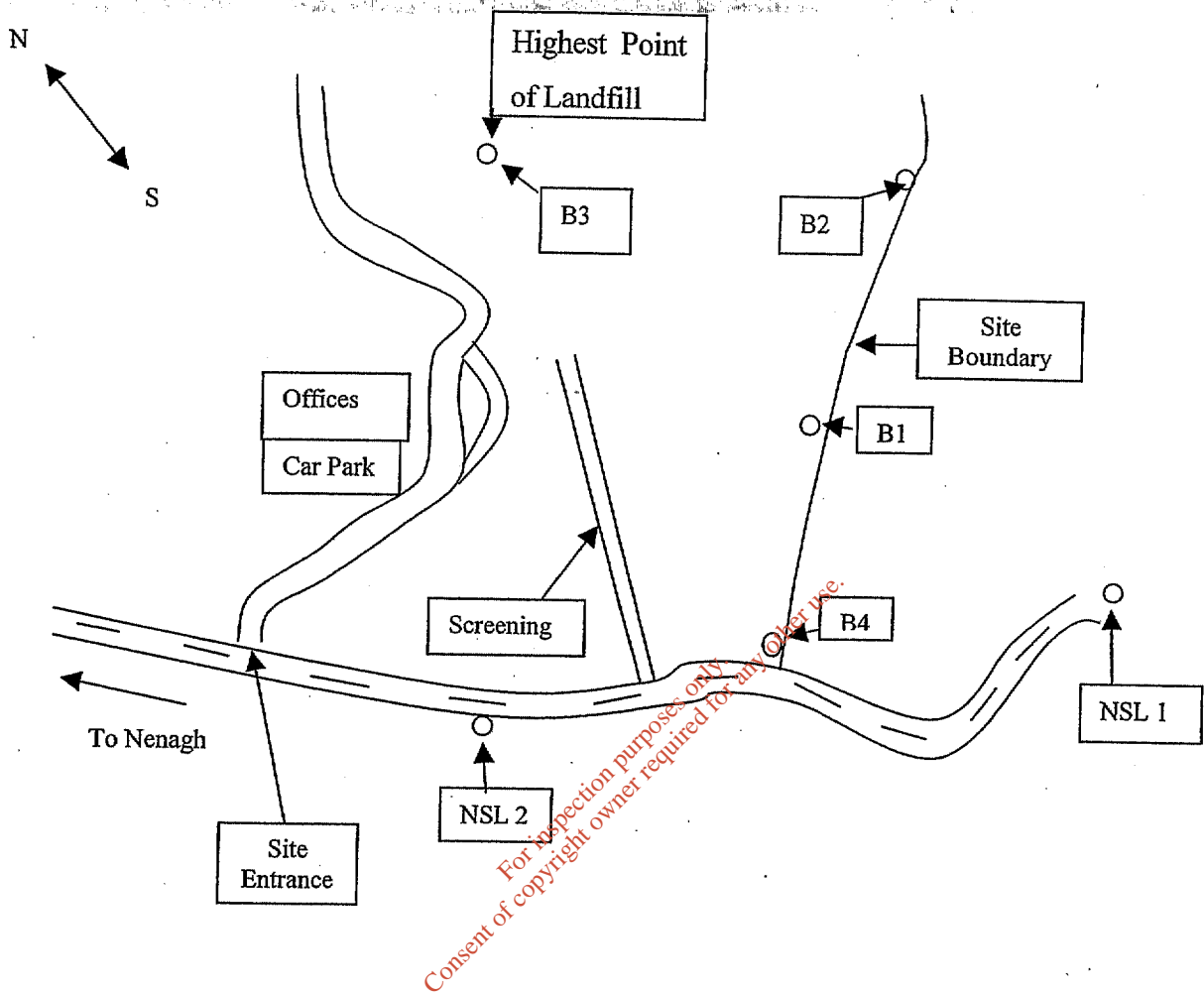


Figure 1. Sketch location map, showing boundary measurement positions B1 to B4, and noise sensitive locations NSL 1 & 2

4 RESULTS

The measured noise levels are presented in Table 2. Noise spectra are shown in Appendix 3. There were no significant tonal features in the spectra.

Loc.	Time/File Number	Measured Noise Level dB(A)			Specific Noise Level dB(A)	Comments
		L _{Aeq}	L _{A90}	L _{A10}		
B4	10:24 #0843	44	39	46	<44	Noise from birds, trees rustling, occasional low level noise from vehicles entering site
B1	11:00 #0844	40	32	42	40	Noise from birds, low level noise from landfill machinery
B2	11:41 #0845	45	37	47	45	Constant noise from birds, constant low level noise from landfill machinery, kite fluttering, trees rustling
B3	12:23 #0846	52	46	55	52	Landfill machinery noise
NSL1	13:30 #0847	45	34	44	<44	Low level noise from landfill machinery, occasional traffic movements
NSL2	14:13 #0848	57	42	59	42	Landfill not audible, constant noise from birds, lawn mower in operation nearby, occasional traffic movements

Table 2: Measured daytime noise levels at Landfill Boundaries and Noise Sensitive Locations near Ballaghveny Landfill on 6th June, 2003.

5. ASSESSMENT OF COMPLIANCE WITH LICENCE LIMITS

There was no exceedance of the Environmental Protection Agency daytime noise limits of 55dB(A) at the landfill boundary locations or at NSL1. At NSL2 the L_{Aeq} value exceeded 55dB(A). However, this was deemed not to be the specific noise level, but was due to noise interference from birds and the nearby traffic movements. Landfill operations were not audible at this location. The specific noise level was taken to be equal to the L_{A90} , which was measured to be 42dB(A).

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APPENDIX 1. MEASUREMENT DETAILS

Instrumentation

CEL 480, B&K 2260

The instruments were calibrated immediately before and after the measurements with a Bruel & Kjaer Type 4231 Calibrator.

Measurement and Reference Intervals

Measurement times were typically 15 minutes at each location. As the noise levels were relatively steady, it holds that: $L_{Aeq15mins} = L_{Aeq30mins} = L_{Aeq1hr}$.

Survey Time and Meteorological Conditions

1000-14:30 hrs Friday 6th June, 2003.

Light breeze, dry, warm, sunny.

Landfill Operating Conditions

The landfill was operating normally during the survey. The landfill entry road has changed since the 2002 survey. The landfill activity was taking place in a location further away from boundary positions B1, B2 and B4 and NSL1, than was the case during the 2002 survey.

Survey Personnel

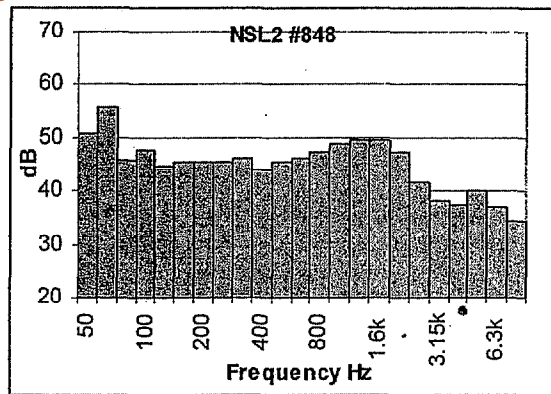
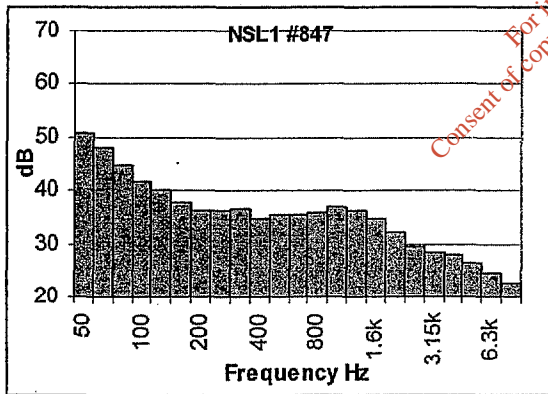
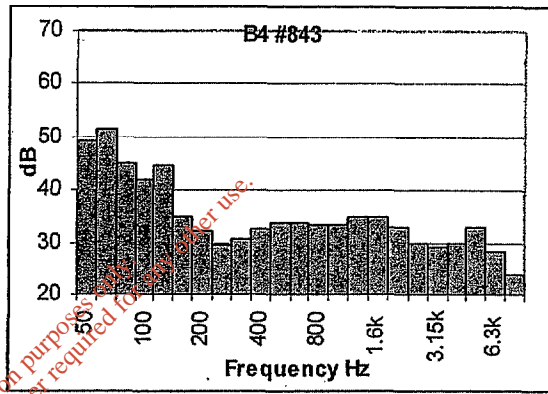
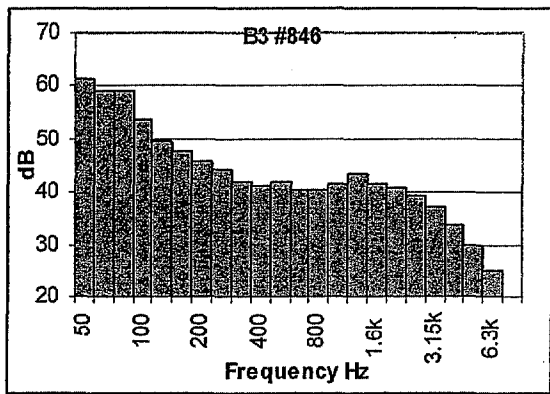
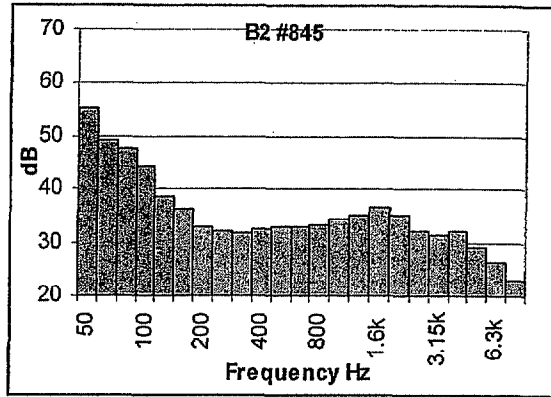
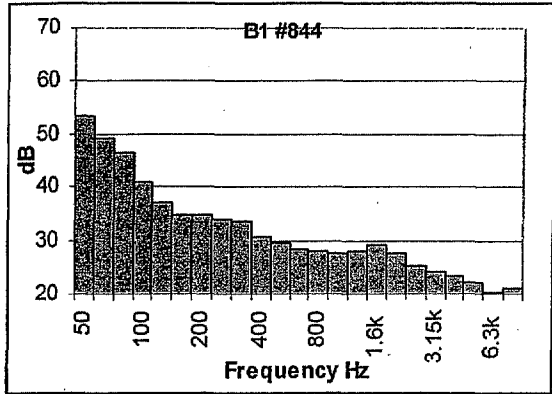
Measurements and reporting were carried out by Kieran Corcoran MSc BSc (Env), of ANV Technology Ltd.

APPENDIX 2. TERMINOLOGY

- dB(A)** a logarithmic noise scale, called the decibel scale. The "A" indicates that a frequency weighting has been applied to take account of the variation in the sensitivity of the human ear as a function of frequency.
- L_{Aeq}** the average noise level during the measurement period, which includes all noise events. The L_{Aeq} value has been found to correlate well with human tolerance of noise, and is the value normally used in setting and monitoring industrial noise limits.
- L_{A90}** the noise level exceeded for 90% of the time. It is generally taken as being representative of the steady underlying background noise at a location. It tends to exclude short events such as cars passing, dogs barking, aircraft flyovers etc.
- L_{A10}** the noise level exceeded for 10% of the time, and is a measure of the higher noise levels present in the ambient noise.
- L_{AS}, L_{AF}** the noise level measured with the instruments response time set to standardised "Slow" or "Fast" response.

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APPENDIX 3. NOISE SPECTRA (THIRD-OCTAVE)



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