

## ATTACHMENT NUMBER C7

### Landscape

#### Contents

**Attachment C7.1**

**Drawing No. 2666-22-DR-017: Existing Topographical Survey as per requirements in Guidance Notes from EPA**

**Attachment C7.2**

**Figure C7.1: Aerial Photograph showing Land Uses as per requirements in Guidance Notes from EPA**

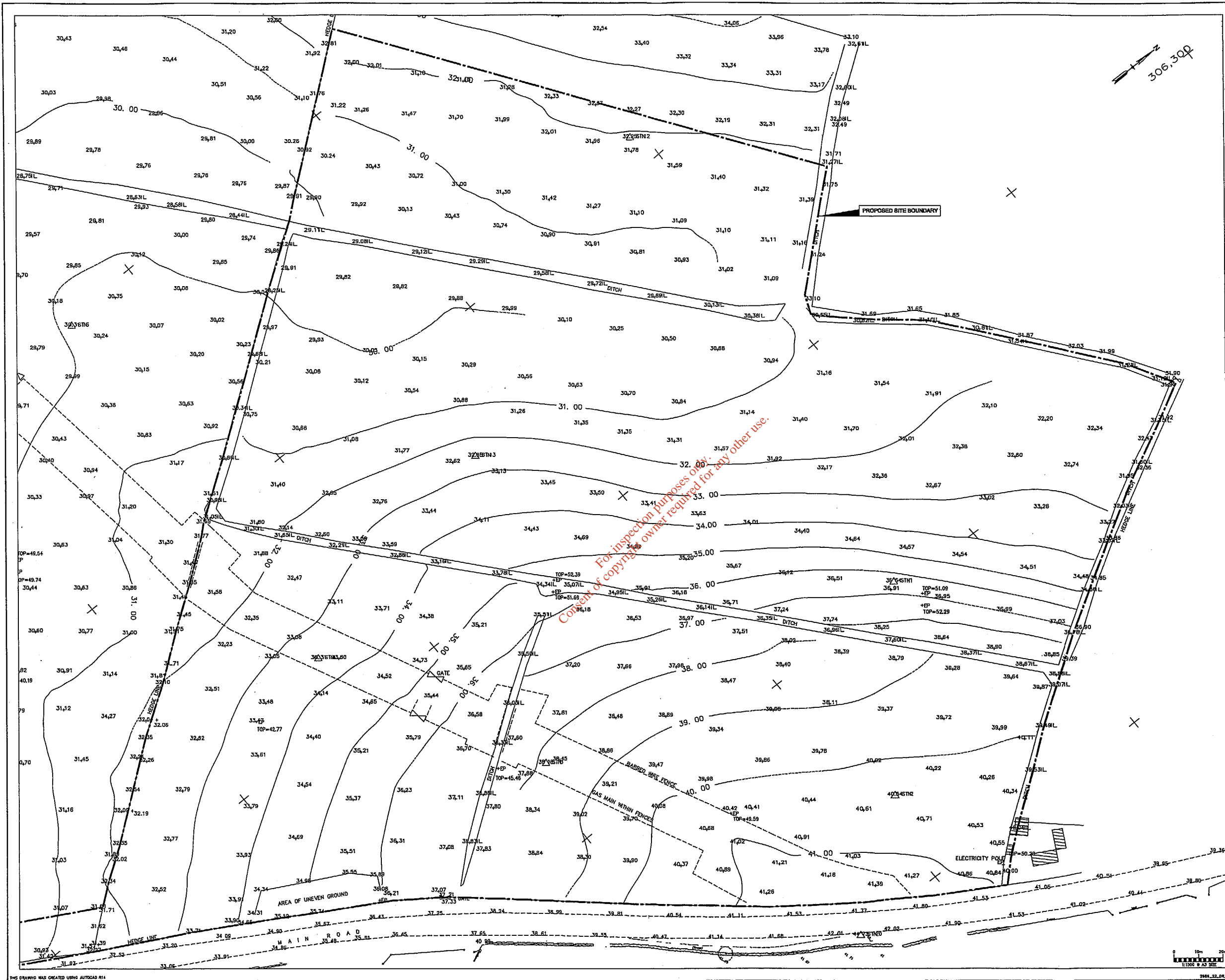
The existing landscape is described in detail in Sections 6.1 and 6.2 of the Environmental Impact Statement (EIS) accompanying this licence application.

A copy of the Visual Impact Assessment Report (Wilson Associates, October 2000) is included in Attachment 7 of the EIS.

**Attachment C7.1**

**Drawing No. 2666-22-DR-017: Existing  
Topographical Survey as per requirements in  
Guidance Notes from EPA**

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PROJECT WASTE MGMT FACILITY - CARRANSTOWN			
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AC SCALE	NONE	CONTR DNG No.	2868-22-DR-017



**Attachment C7.2**

**Figure C7.1: Aerial Photograph showing Land Uses as per requirements in Guidance Notes from EPA**

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## ATTACHMENT NUMBER C8

### Noise

#### Contents

- Attachment C8.1**                      **Additional Baseline Noise Survey (Project Management Ltd., March 2001)**
- Attachment C8.2**                      **Completed Waste Licence Application Table 1.8 (Noise Monitoring)**

**The existing noise environment is described in detail in Section 5.2 of the Environmental Impact Statement (EIS) accompanying this licence application and Section 2.9.1 of the EIS Additional Information.**

**A copy of the Baseline Noise Study at Carranstown, Co. Meath (Eanna O'Kelly & Associates, Consultant Acoustic Engineers, July 2000) is included in Attachment 6 of the EIS.**

**Attachment C8.1**

**Additional Baseline Noise Survey (Project Management Ltd., March 2001)**

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# Document Lead Sheet

PM Project No: 2666

Document No: 2666-22-RP-008

**Indaver Ireland Ltd.**

**Additional Baseline Noise Survey, February 2001**

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ISSUE	DATE	ORIG	AUTH CHK	REVIEW	APPRVD PM	APPRVD CLIENT	DESCRIPTION
A	1/3/01	EC	MG		MG		For Information



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## 1. INTRODUCTION

As part of the Waste Licence Application submission for Indaver Ireland, a supplementary baseline environmental noise survey was carried out by Project Management Ltd. (PM) at the proposed greenfield site for the location of the waste management facility.

## 2. METHODOLOGY

### 2.1 Noise Measurements

The noise survey was carried out at two locations in the vicinity of the proposed site. The noise monitoring locations (NM2 and NM3) are located as follows:

NM2: Nearest Noise Sensitive Location; adjacent to the R152 road. It was chosen as representative of the noise sensitive residential buildings closest to the proposed site.

NM3 Western boundary of site at the mid point of the furthest field from the road. It was chosen to establish baseline levels with as little noise contribution from traffic as possible.

The locations of both monitoring points are shown in Figure 2.1 overleaf. The survey was conducted in accordance with the International Standard ISO1996: Acoustics – Description and Measurement of Environmental Noise, as recommended in the EPA Guidance Note for Noise in relation to Scheduled Activities. The following measurements were taken at each monitoring point:

Daytime:  $L_{Aeq}$ ,  $L_{A90}$  and  $L_{A10}$  measured over a 30 minute period

Night-time:  $L_{Aeq}$ ,  $L_{A90}$  and  $L_{A10}$  measured over a 15 minute period

The time periods over which the daytime and night-time measurements were taken are assumed to be representative of any long term fluctuations in the noise levels.

### 2.2 Location of Site

The proposed greenfield site is located approximately 3km north-east of Duleek, along the R152 (Drogheda to Duleek Road) close to the existing Platin Cement factory in Carranstown, Co. Meath.

### 2.3 Equipment

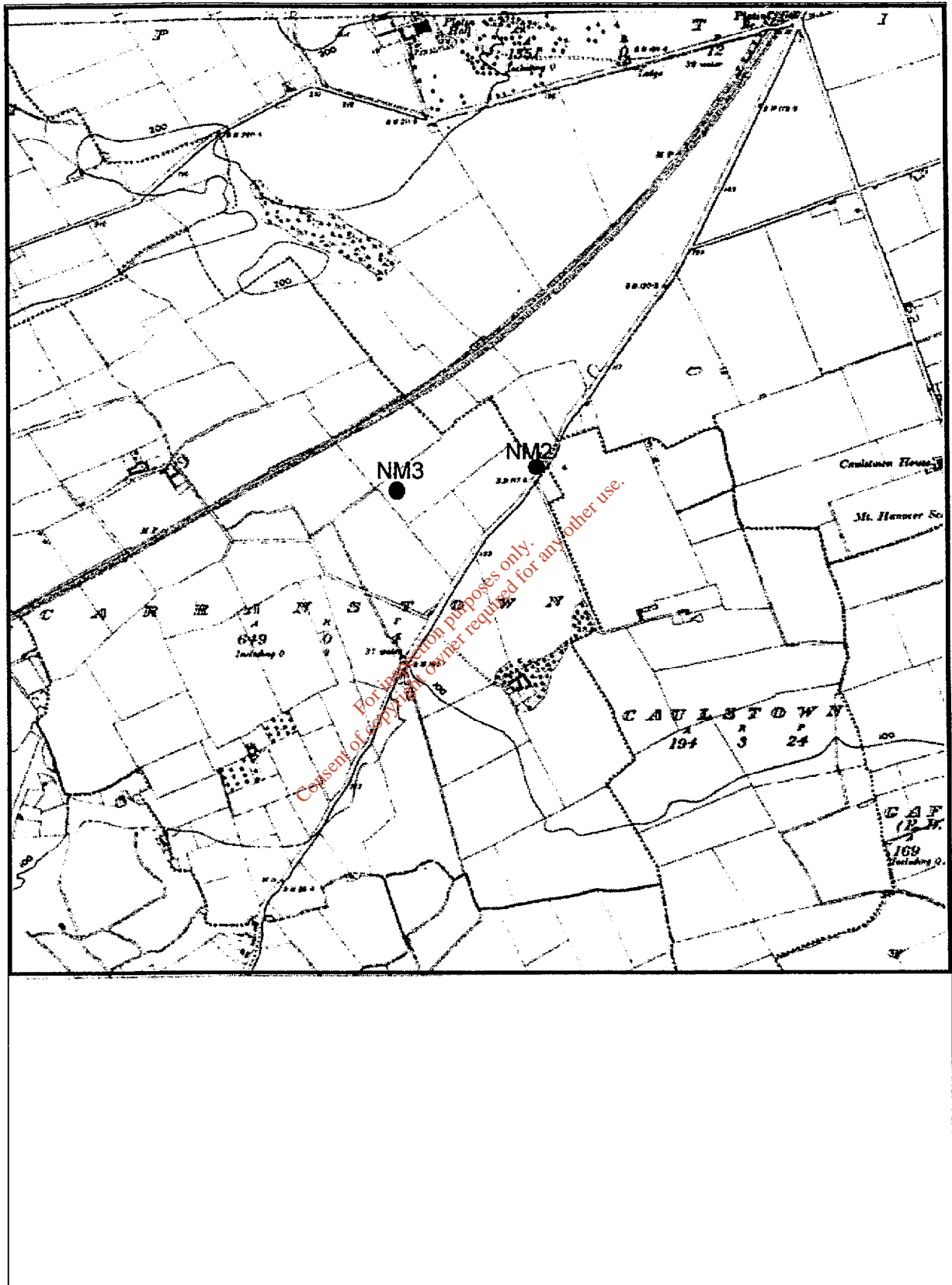
The following noise measurement equipment was used to conduct the survey:

- Bruel and Kjaer type 2260 Sound Level Meter<sup>1</sup> c/w Bruel and Kjaer type 4189 Microphone
- Bruel and Kjaer type 4231 Calibrator
- Tripod

<sup>1</sup> The Bruel and Kjaer type 2260 Sound Level Meter is a type 1 meter



Figure 2.1 Location of Noise Monitoring Points





## 2.4 Calibration

The Sound Level Meter was calibrated before and after each measurement episode (i.e. daytime and night-time) using a Bruel and Kjaer type 4231 Calibrator.

## 2.5 Weather Conditions

The following weather conditions were observed during the noise survey:

- Daytime (08/02/01): Clear and sunny, ~11°C, very slight breeze from south-westerly direction (prevailing).
- Daytime (13/02/01): Clear and sunny, ~10°C, light wind from south-westerly direction (prevailing).
- Night-time (13&14/02/01): Clear, cold, ~2°C, calm conditions

The weather conditions on both days were considered favourable to carry out a noise survey.

## 2.6 Measurement Parameters

Noise is measured in terms of decibels (dB). The measurements taken are defined below.

### 2.6.1 Decibel (dB)

A unit of level derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure level the reference quantity is 20µPa, the threshold of normal hearing is in the region of 0dB, and 140dB is the threshold of pain. A change of 1dB is only perceptible under controlled conditions.

### 2.6.2 dBA

Decibels measured on a sound level meter incorporating a frequency weighting (A Weighting) which differentiates between sound of different frequency (pitch) in a similar way to the human ear.

### 2.6.3 Hertz (Hz)

Unit of frequency, equal to one cycle per second. Frequency is related to the pitch of a sound.

### 2.6.4 $L_{Aeq T}$ Value

The equivalent continuous sound level – the sound level of a steady sound having the same energy as a fluctuating sound over a specified measuring period T.



**2.6.5 L<sub>A90</sub> and L<sub>A10</sub> Values**

The L<sub>A90</sub> and L<sub>A10</sub> values represent the A weighted sound levels exceeded for a percentage of the instrument measuring time. L<sub>A10</sub> indicates that for 10% of the monitoring period the sound levels were greater than the quoted value. L<sub>A10</sub> is a good statistical parameter for expressing event noise such as passing traffic. The L<sub>A90</sub> represents the sound level exceeded for 90% of the time and is a good indicator of background noise levels.

**3. RESULTS**

Daytime and night-time measurements are shown in Table 3.1 and 3.2 respectively.

*Table 3.1 Daytime Noise Results*

Monitoring Point	Date	Time	L <sub>Aeq</sub> (dBA)	L <sub>A90</sub> (dBA)	L <sub>A10</sub> (dBA)	Comments
NM2	08/02/01	16.20-16.50	62	51	66	Traffic on R152.
NM3	08/02/01	15.30-16.00	47	44	49	Crows overhead.
NM2	13/02/01	12.10-12.40	62	49	66	Frequent traffic on R152.
NM3	13/02/01	12.53-13.23	48	43	51	Intermittent birdsong

*Table 3.2 Night-time Noise Results*

Monitoring Point	Date	Time	L <sub>Aeq</sub> (dBA)	L <sub>A90</sub> (dBA)	L <sub>A10</sub> (dBA)	Comments
NM2	13/02/01	23.50-00.05	57	38	62	Traffic on R152.
NM2	14/02/01	00.55-01.10	54	39	57	Light traffic.
NM3	14/02/01	00.25-00.40	43	37	46	Distant activity in quarry.



## 4. DISCUSSION

As can be seen from Tables 3.1 and 3.2, both daytime and night-time noise levels recorded at location NM2 and to a lesser extent daytime noise levels at NM3, were heavily influenced by traffic on the R152. Traffic noise was found to be the dominant source of noise on both monitoring occasions. This is more obvious when the  $L_{A10}$  and  $L_{A90}$  values are examined.

At NM2, both daytime  $L_{Aeq}$  measurements were in excess of 60dBA, whereas the corresponding  $L_{A10}$  and  $L_{A90}$  values were around 66dBA and 50dBA respectively. This pattern is typical of an intermittent noise source such as road traffic. Night-time  $L_{Aeq}$  values were around 55dBA.

Noise levels at NM3 both during the day and at night remained relatively constant. Traffic was barely audible and was a minor noise contributor at this monitoring point, and this is confirmed by the relative similarity of the  $L_{Aeq}$ ,  $L_{A10}$  and  $L_{A90}$  measurements. The main noise contributor at NM3 was industrial activity from the Platin Quarry.

In summary, the noise levels at NM2 are affected by traffic and possibly to a lesser degree industrial activity in the vicinity of the site. The measured noise levels at NM3 are typical of a rural environment, with some industrial noise from the quarry. The background noise level without traffic is therefore represented by NM3, i.e. 48 dBA daytime and 43 dBA night-time.

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**Attachment C8.2**

**Completed Waste Licence Application Table 1.8  
(Noise Monitoring)**

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**Table 1.8 NOISE MONITORING***Third Octave analysis for noise emissions should be used to determine tonal noises*

Location	National Grid Reference (5N, 5E)	Sound Pressure Levels		
		L(A) <sub>eq</sub>	L(A) <sub>10</sub>	L(A) <sub>90</sub>
<b>1. SITE BOUNDARY</b>				
Location 1: NM1 (Daytime)	Note 1	61.3	-	47.3
Location 1: NM1 (Night-time)		55.8	-	42.5
Location 2: NM3 (Daytime)	Note 2	48	43	51
Location 3: NM3 (Night-time)		43	37	46
Location 4:				
Location 5:				
Location 6:				
Location 7:				
Location 8:				
<b>2. NOISE SENSITIVE LOCATIONS</b>				
Location 1: NM2 (Daytime)	Note 3	62	51	66
Location 1: NM2 (Night-time)		57	38	62
Location 2:				
Location 3:				
Location 4:				
Location 5:				
Location 6:				
Location 7:				
Location 8:				

Notes:

1. NM1 is located 30m back from the edge of the R152 road within the proposed site opposite the two existing residences.
2. NM3 is located at the western boundary of the site at the mid point of the furthest field from the R152 road.
3. NM2 is located at the nearest noise sensitive location, adjacent to the R152 road.



## ATTACHMENT NUMBER C9

### Surface Water

#### Contents

The existing surface water environment is described in detail in Section 9.2 of the Environmental Impact Statement (EIS) accompanying this licence application and Section 2.3 of Attachment 9 of the EIS.

#### Attachment C9.1

**Figure C9.1. Map showing the surface water catchment, surface water bodies and surface water supplies in the vicinity of the proposed site**

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**Attachment C9.1**

**Figure C9.1: Map showing the surface water catchment, surface water bodies and surface water supplies in the vicinity of the proposed site**

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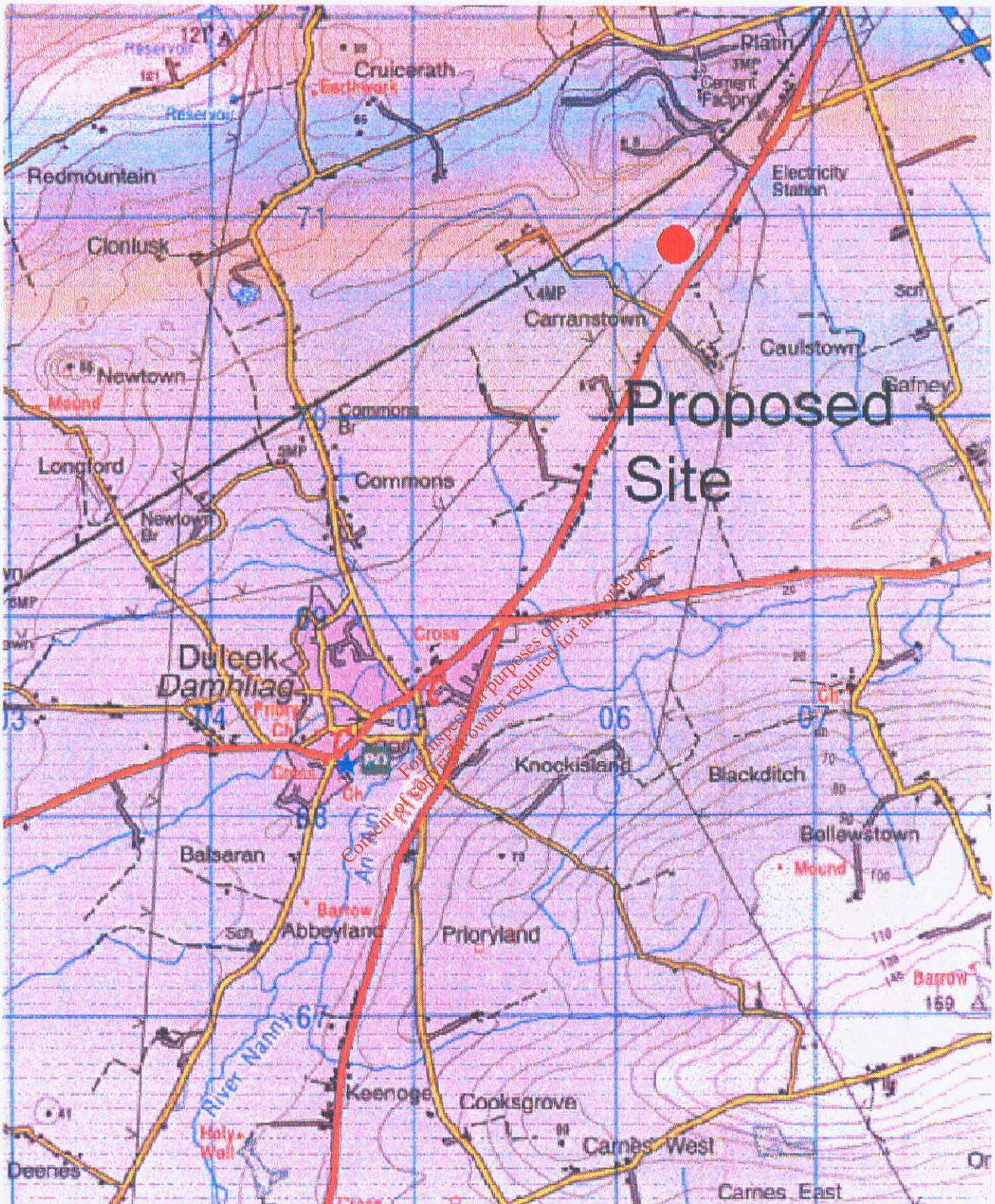


Figure C9.1: Map showing the surface water catchment, surface water bodies and surface water supplies in the vicinity of the proposed site