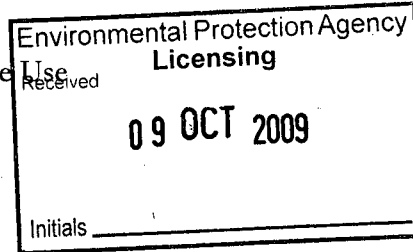




Mr. Frank Clinton
Programme Manager,
Office of Climate Licensing and Resource Use
Environmental Protection Agency,
P.O. Box 3000,
Johnstown Castle Estate,
County Wexford



Greenstar Limited,
Unit 6, Ballyogan Business Park,
Ballyogan Road, Sandyford,
Dublin 18.
Tel: + 353 1 294 7900
Fax: + 353 1 294 7990
Email: info@greenstar.ie

08 October, 2009

RE: Technical Amendment Application seeking increase in Operational Hours at Greenstar Recycling (Munster) Limited - Waste Licence No. W0136-02

Dear Mr. Clinton,

Under the provisions of Section 42B of the Waste Management Act, Greenstar hereby applies to the Environmental Protection Agency for a Technical Amendment for the above referenced site. Greenstar Recycling (Munster) Limited was granted a revised Waste Licence for the above referenced facility at Sarsfieldcourt Industrial Estate, Glanmire, County Cork in May 2004. If granted, the technical amendment will involve a limited change to the licence conditions.

Background

The existing licence allows Greenstar to accept and process 99,017 tonnes of waste per annum, comprising commercial/industrial non hazardous waste, household waste, source-separated biodegradable waste for composting and construction and demolition waste. All waste processing takes place inside the waste transfer building, as specified in Condition 5.1 of the Licence.

Greenstar previously sought a technical amendment to the licence in an application dated 19 February 2009 and following consideration, the Agency advised in June 2009 that they could not accede to the Greenstar request on that occasion. Following this decision, Greenstar personnel (Eamonn Medley, Tomas Healy and Malcolm Dowling) met with senior Agency Enforcement officials (Mr Kieran O'Brien and Mr Peter Cunningham) from the Cork Regional office to discuss and clarify enforcement issues referred to in the Inspector's Report. It was confirmed at that meeting that Greenstar intended to submit a further application for a technical amended on revised terms explained below.

Greenstar is now seeking a technical amendment under a revised set of circumstances and additional information is now included to support this application.

Registered in Ireland No. 325120

Directors: G. Bailey, J. Dempsey, N. Parkinson,
E. Bolger (Secretary).
Registered Office: Burton Court, Burton Hall Road,
Sandyford, Dublin 18.

Affiliate Organisation, CIWM
Member of the IWMA
Corporate Affiliate of the EI

EPA Export 26-07-2013:16:53:51

Basis of this Application

Conditions 1.10.1, 1.10.2 and 1.10.3 of the existing Waste Licence set the following Waste Acceptance Hours and Hours of Operation: -

- **1.10.1** *Waste shall be accepted at the facility only between the hours of 8.00am to 6.00pm Monday to Friday inclusive and 8.00pm to 2.00pm on Saturdays.*
- **1.10.2** *The facility shall be operated only during the hours of 7:00am to 8:00pm Monday to Friday inclusive and 7.00am to 3.00pm on Saturdays.*
- **1.10.3** *The facility shall not be operated and waste shall not be accepted at the facility on Sundays or on Bank Holidays.*

Greenstar now seek the agreement of the Agency to alter the above conditions to allow for the following;

Condition 1.10.2 - Operations at the facility outside of the hours specified and on a 24 hours basis from Monday to Saturday inclusive, if necessary. The request in this instance is to allow for operational flexibility and to provide contingency to counter any delays or stoppages in processing that the facility may experience during daytime due to maintenance issues etc.

Condition 1.10.1 – Acceptance at the facility permitted up until 20.00 hours on Monday to Saturday inclusive. This limited extension is sought to allow additional flexibility and is in line with the licensed hours afforded to our competitors in the region. At present Greenstar finds itself at a distinct commercial disadvantage. Particularly with regard to the roll-out of organic waste collection from commercial customers, it can be the case that these customers require the same day collection of waste.

Condition 1.10.3 – Operations and waste acceptance permitted at the facility on Bank Holidays with Agency agreement. Again, this provides flexibility to collect and treat materials particularly from commercial customers on bank holidays.

In addition to the above, Greenstar also take this opportunity to seek a minor amendment to the noise emission limits as specified in Schedule C.1 of the licence. Schedule C.1 indicates that the following limits apply at the nominated monitoring locations; 55dB until 2200 hours and 45 dB from 2200 until 0800 hours. Schedule C.1 applies these limits to each of the six monitoring locations specified in Schedule D.1. Recently issued waste licences typically apply limits to noise sensitive locations (NSLs) but this is not reflected in W0136-02. In this instance, only one of the six measurement stations currently specified is a NSL. It is appropriate to amend the relevant licence schedule so that the 55/45 dB limits are relevant to this station (N9).

Supporting Information

Greenstar implements a comprehensive environmental monitoring programme at the site to assess the significance of emissions from site activities. The programme includes surface water, wastewater, groundwater, noise and dust monitoring. The proposed operation of the facility at night will not result in any new emission or changes to emission points and the only emission of potential environmental significance associated with the proposal is noise.

Schedule C.1 of the existing licence outlines noise emission limits for day and night (55dB day limit and 45dB night limit). In addition, Condition 6.7 states the following;

“There shall be no clearly audible tonal component or impulsive component in the noise emissions from the activity at the noise sensitive locations”

There are 6 noise monitoring locations including a noise sensitive location and a noise monitoring report is submitted to the Agency on an annual basis. The most recent annual survey was carried out in June 2009 and was submitted to the Agency. The report concluded that Greenstar is not in breach of its licence.

The annual noise survey focussed on day-time noise limits, as the facility does not currently operate at night-time. In order to provide an assessment of the noise impact due to proposed night-time operations and following the discussions held with Senior Agency staff referred to above, Greenstar commissioned a separate noise survey in September 2009.

Noise Survey (September 2009)

Noise assessment specialists, DixonBrosnan Environment Consultants were commissioned to carry out a noise survey at the on 17 September 2009 and a copy of their report is attached for the Agency's consideration. The purpose of the survey was to assess likely noise emissions that would arise from site operations should the facility operate at night.

Measurements were undertaken at each of the six monitoring stations specified in Schedule D.1 of the waste licence. Of these six locations it is noted that one (N9) is regarded as a noise sensitive location. To reflect this status Greenstar requests that the relevant schedule is amended (above) so that the emission limits measured for compliance purposes refer to solely to the noise sensitive location.

The noise monitoring report focuses on the noise environment recorded at the noise sensitive location and concludes that the primary source of noise levels recorded at N9 is from road traffic in the industrial estate. Where traffic is decreased or temporarily absent in the vicinity of the monitoring point, levels are much reduced (below 40 dB). Emissions from the facility were not audible at N9 and it is understood that noise levels at N9 attributable to Greenstar operations were less than the 55 dB daytime limit which will apply until 2200 hours and less than the 45 dB limit that will apply thereafter.

In addition, the report concludes that there were no tonal components in the noise emissions from the Greenstar facility at N9, and therefore Condition 6.7 of the waste licence was not breached.

Further Clarification

The following further clarification is offered to support this application;

- The proposal will not result in a significant change to the activities at the facility.
- Greenstar applied for a licence review in May 2003. The changes sought in this instance were significant and included a request to allow for acceptance of increased volumes of household waste as well as the acceptance of source segregated compostable waste. Despite the significant change in the licence, during the consultation period no submissions were received by the Agency and there were no third party objections to the proposed decision. The revised licence was subsequently granted in May 2004.
- The facility is well managed and is certified to ISO 14001 standards, continually performing well in audits. In 2008, four complaints were received. This number is reduced so far in 2009.
- In this latest technical amendment application, Greenstar is not seeking to accept waste on a 24/7 basis. The change requested in terms of waste acceptance is limited to an additional 2 hours in the evening to allow for flexibility and to bring the facility in line with hours of acceptance at other licensed facilities in the Region.
- The extension sought in relation to operating hours is limited to activity carried out inside the waste transfer building and Greenstar will continue to comply with Condition 5.1 in this regard. The fast acting doors will be kept closed.
- In the context of the site location, there are no significant environmental reasons for restricting the hours of operation. A noise assessment commissioned specifically to assess the likely impact of the proposed changes concludes that night-time operations will comply with emission levels at noise sensitive location.
- The amendment will allow for maximising of pre-treatment capability at the facility and will facilitate the diversion of biodegradable and other recyclable waste from the incoming waste stream.
- The adjacent permitted facility (Glyntown Enterprises Limited) is permitted to operate on a 24/7 basis and has done so in the past. There were no associated complaints. In this regard, indoor operation at the licensed site is not setting a precedent.
- The facility is located in an industrial estate approximately 8km northeast of Cork City and 5km north of Glanmire in the townland of Sarsfieldcourt. This industrial estate has a mixture of industrial and commercial properties and the predominant surrounding land use in the vicinity of the estate is agricultural pasture land.
- In general, the emission limit values specified in the licence have not been exceeded during the monitoring to date. Greenstar has introduced an Environmental Management System (EMS) and operates in compliance with ISO 14001. Greenstar has installed an air abatement system in the MRF building which is designed to control dust and odour emissions from the facility and this has been working successfully since June 2006.

Summary

Greenstar is proposing modest changes to the existing waste licence (W0136-02). The changes will allow Greenstar to consider increasing the operational hours at the site. Amendment to this condition (1.10.2) will provide contingency in the event of a breakdown during daytime operations and will allow Greenstar to be more effective in recovering material.

Given the location of the facility, the nature of the licensed waste operations (indoor waste handling) and the mitigation measures that are in place at the facility, it is considered that this change can be made through a technical amendment application.

Greenstar also seeks agreement from the Agency in accordance with Conditions 1.10.1 to allow for a limited (2 hour) extension to the hours during which waste can be accepted at the facility, which is to meet customer demands and is consistent with waste acceptance hours approved for our competitors.

Finally, Greenstar seeks an amendment to Condition 1.10.3 so that operations can be considered on bank holidays. Again, this element of the amendment request is prompted by the requirement to respond to customer needs.

Each of the three changes is limited in scope and does not constitute a significant change to the activity. The proposed technical amendment will not result in any significant alteration to emissions. Given the nature of these changes as described above, Greenstar would be appreciative if you can give this proposal your earliest possible consideration.

To facilitate an early determination of this technical amendment application, Greenstar respectfully requests a meeting with the relevant OCLR Inspector.

Yours sincerely,



Malcolm Dowling
Group Compliance and Environment Manager

c.c. Mr Kieran O'Brien, OEE
Mr Peter Cunningham, OEE

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Project Noise survey at Greenstar MRF, Sarsfieldcourt, Glanmire, Co. Cork re proposed night-time operations				
Client Greenstar				
Project no.	No pages	Client reference	©DixonBrosnan 2009	
07063	12	W0136-02	v250809	
DixonBrosnan Shronagreehy Kealkill Bantry Co Cork Tel 086 813 1195 damian@dixonbrosnan.com www.dixonbrosnan.com				
Report no.	Date	Status	Prepared by	Chkd
07063.4.1	22.09.09	Release to client	Damian Brosnan	CD
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1 Introduction

1.1 DixonBrosnan Environmental Consultants were commissioned by Greenstar to carry out a noise survey at their materials recovery facility (MRF) located at Sarsfieldcourt Industrial Estate, Sarsfieldcourt, Glanmire, Co. Cork. The facility is regulated by the Environmental Protection Agency (EPA) through waste licence W0136-02. Several conditions and schedules relating to noise included in the licence are summarised in **Appendix 2**.

1.2 Waste licence W0136-02 currently permits waste processing operations until 2000 hours. Greenstar intends to apply to the Agency to extend operations beyond 2000 hours. A review of noise conditions presented in **Appendix 2** indicates that the following limits will apply to the extended operations: 55 dB until 2200 hours, and 45 dB from 2200 hours to 0800 hours. At present, these limits apply to all six measurement stations specified in Schedule D.1 of the licence and shown in **Appendix 3**. It is likely that the opportunity will be taken during the application process to update Schedule D.1; as recent waste licences typically apply limits only to noise sensitive locations (NSLs), it is expected that the opportunity will be taken to update licence W0136-02 to reflect same. Only one of the six measurement stations currently specified is a NSL, and it is therefore assumed in this report that the 55/45 dB limits are relevant to this station.

1.3 A noise survey was undertaken on Thursday 17 09 09 during the period 1840-2000 hours. Measurements were recorded at the six monitoring stations indicated in **Appendix 3**. Weather conditions, monitoring methodology and equipment specifications are described in **Appendix 4**. Throughout the survey, noise emissions arose from several sources at the Greenstar facility which will arise after 2000 hours if the extended operations are approved. These sources are:

- Odour abatement system (OAS) operating continuously at eastern façade of MRF building.
- Reverse pressure jets (RPJ) arising regularly at OAS.
- Compressor operating continuously at western façade of MRF building.
- Generator set operating continuously at western façade of MRF building.
- Shredder, trommel, baler and conveyors operating continuously within MRF building.
- Grab, front end loader and forklift truck operating almost continuously within MRF building.

1.4 All doors to the MRF building remained closed throughout the survey. Emissions measured are therefore representative of those which will arise after 2000 hours. The limited time available required the use of measurement intervals of 10 minutes, and thus shorter than the 30 minute intervals specified in the site waste licence. However, the steady nature of the emissions is such that levels recorded over short intervals are representative of longer intervals.

2 Results & analysis

2.1 Noise levels recorded at the six measurement stations are presented in **Appendix 5**. Recorded frequency spectra are presented in **Appendix 6**.

2.2 At both measurement stations inside the site boundary (**N1** and **N2**), the continuous emissions from the OAS, compressor and genset are most accurately represented by the $L_{AF90\ 10\ min}$ parameter. Levels measured here were 51 and 59 dB respectively. **Neither station is a NSL**. A minor tone in the 25 Hz band detected at N1 was linked to a truck onsite; such emissions will **not** arise after 2000 hours.

2.3 At two of the three monitoring stations within the industrial estate (**N5** and **N6**), continuous emissions from the Greenstar compressor, genset and OAS are most accurately described by the $L_{AF90\ 10\ min}$ parameter as before. $L_{AF90\ 10\ min}$ levels measured at N5 and N6 were 47 and 44 dB respectively. **Neither station is a NSL**.

2.4 At the third station located within the industrial estate (**N7**), noise levels were influenced by ongoing waste management operations at an adjacent premises. The $L_{AF90\ 10\ min}$ level recorded here (47 dB) was influenced by these operations, and this parameter is therefore not considered representative of Greenstar emissions. It can be concluded that Greenstar emissions were less than 47 dB here. As before, **this station is not a NSL**.

2.5 The $L_{Aeq\ 10\ min}$ level measured at station **N9**, the only NSL included in Schedule D.1 of the licence, was 67 dB, arising entirely from road traffic noise. The time history profile presented in **Appendix 7** shows the dominance of road traffic. Between traffic movements, the L_{AF} level decreased towards 40 dB. Later in the interval, as traffic volume decreased following the ending of a nearby football match, L_{AF} levels decreased below 40 dB. The overall $L_{AF90\ 10\ min}$ level measured was 38 dB. This level is considered partly representative of the continuous emissions from the Greenstar facility ie. these emissions are **likely to have been less than 38 dB**. It follows that noise levels at N9 attributable to Greenstar operations were less than the 55 dB daytime limit which will apply until 2200 hours, and **less than the 45 dB limit** which will apply thereafter.

2.6 There were **no tonal components** in the noise emissions from the Greenstar facility at N9, and therefore Condition 6.7 of the licence was not breached. One third octave band frequency analysis did not detect tones at any of the stations, other than that noted in paragraph 2.2. While RPJ emissions associated with the OAS were impulsive when heard onsite at the Greenstar facility, these emissions were only faintly audible with difficulty at station N9. The RPJ emissions were not 'clearly audible' at this NSL as required by Condition 6.7, and were therefore **in compliance** with this condition.

Appendix 1: Glossary

Ambient	The total noise environment at a location, including all sounds present.												
A-weighting	The weighting or adjustment applied to sound level recordings to approximate the non-linear frequency response of the human ear. The A-weighting is denoted by the suffix A in the parameters listed below such as L_{Aeq} , L_{A10} , etc.												
Background noise	The A-weighted sound pressure level of the residual noise in decibels exceeded for 90% of a given time interval. The L_{A90} .												
Decibel (dB)	<p>The units of the noise measurement scale. Based on logarithmic scale so cannot be simply added or subtracted. A 3 dB difference is the smallest change perceptible to the human ear. A 10 dB difference is perceived as a doubling or halving of the sound level. Throughout this report noise levels are presented as decibels relative to 20 μPa. Examples of decibel levels are as follows:</p> <table><tr><td>20</td><td>Very quiet room</td><td>80</td><td>Busy pub</td></tr><tr><td>35</td><td>Rural environment at night</td><td>100</td><td>Nightclub</td></tr><tr><td>65</td><td>Conversation</td><td>120</td><td>Jet take-off</td></tr></table>	20	Very quiet room	80	Busy pub	35	Rural environment at night	100	Nightclub	65	Conversation	120	Jet take-off
20	Very quiet room	80	Busy pub										
35	Rural environment at night	100	Nightclub										
65	Conversation	120	Jet take-off										
Free-field	Noise environment away from all surfaces other than the ground. Noise levels recorded near walls will be artificially increased due to reflections. Where there is more than one wall, noise levels will be further increased. Levels recorded within such 'near-field' conditions will be increased by up to 3 dB, and up to 6 dB near a corner. In practice, free-field conditions will be achieved by maintaining a separation distance of at least 3.5 m from walls.												
Frequency	The number of cycles per second of a sound or vibration wave. An example of a low frequency noise is a hum, while a whine represents a higher frequency. The range of human hearing approaches 20-20,000 Hz.												
Hertz (Hz)	The unit of frequency measurement.												
Impulse	A noise which is of short duration, typically less than one second, the sound pressure level of which is significantly higher than the background.												
Interval	The time period t over which noise monitoring is conducted. May be 5-60 minutes, depending on the standard applied. The interval is usually denoted by t as in $L_{Aeq,t}$, $L_{A90,t}$, etc.												
L_{AE}	The sound exposure level is a measure of the noise level of an event, standardised to an interval of one second, and containing the same acoustical energy as the actual event.												
$L_{Aeq,t}$	The equivalent continuous sound level during a measurement interval, effectively representing the average A-weighted noise level.												

L _{AF}	The A-weighted sound pressure level measured using a fast time weighting and averaged over one second. The L _{AF} value therefore changes each second.
L _{Aeq}	The A-weighted sound pressure level at a particular instant, measured using an impulse time weighting on the sound level meter. May be used in the assessment of impulse noise.
L _{Ant}	The A-weighted sound level which is exceeded for n% of the measurement interval.
L _{Cpeak}	The peak C-weighted sound pressure level recorded during the measurement interval. The highest peak on the sound pressure wave before any time constant is applied. The C-weighting is used rather than the A-weighting as the latter screens out low frequency sources.
L _{Req t}	The rating noise level, derived from the L _{Aeq t} plus specified adjustments for tonal and impulsive characteristics.
L _{WA}	The sound power generated by a noise source due to the conversion of work energy into noise energy. Measured with A-weighting.
L _{AF10 t}	The A-weighted sound level measured using a fast time weighting which is exceeded for 10% of the measurement interval, usually used to quantify traffic noise.
L _{AF90 t}	The A-weighted sound level measured using a fast time weighting which is exceeded for 90% of the measurement interval, usually used to quantify background noise. May also be used to describe the noise level from a continuous steady or almost-steady source, particularly where the local noise environment fluctuates.
Near-field	Area where free field conditions do not apply.
Noise sensitive location	Any dwelling house, hotel or hostel, health building, educational establishment, place 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.
1/3 octave band analysis	Frequency analysis of sound such that the frequency spectrum is subdivided into bands of one third of an octave each. An octave is taken to be a frequency interval, the upper limit of which is twice the lower limit in Hertz.
Residual noise	The noise level remaining at a given position in a given situation when the specific noise source is absent or does not contribute to the noise level.
Specific noise	The noise source under investigation for assessing the likelihood of complaints.
Tone	A character of the noise caused by the dominance of one or more frequencies which may result in increased noise nuisance.
Z-weighting	Standard weighting applied by sound level meters to represent linear scale.

Appendix 2: Waste licence W0136-02 noise conditions

Condition 6.7

There shall be no clearly audible tonal component or impulsive component in the noise emissions from the activity at the noise sensitive locations.

Schedule C.1

Noise emissions: (Measured at the monitoring points indicated in Table D.1 Monitoring Locations)

Day dB(A) L_{Aeq} 30 min	Night dB(A) L_{Aeq} 30 min
55	45

Schedule D.1

From Table D.1 Monitoring locations:

N1 N2 N5 N6 N7 Nearest noise sensitive location (designated N9)

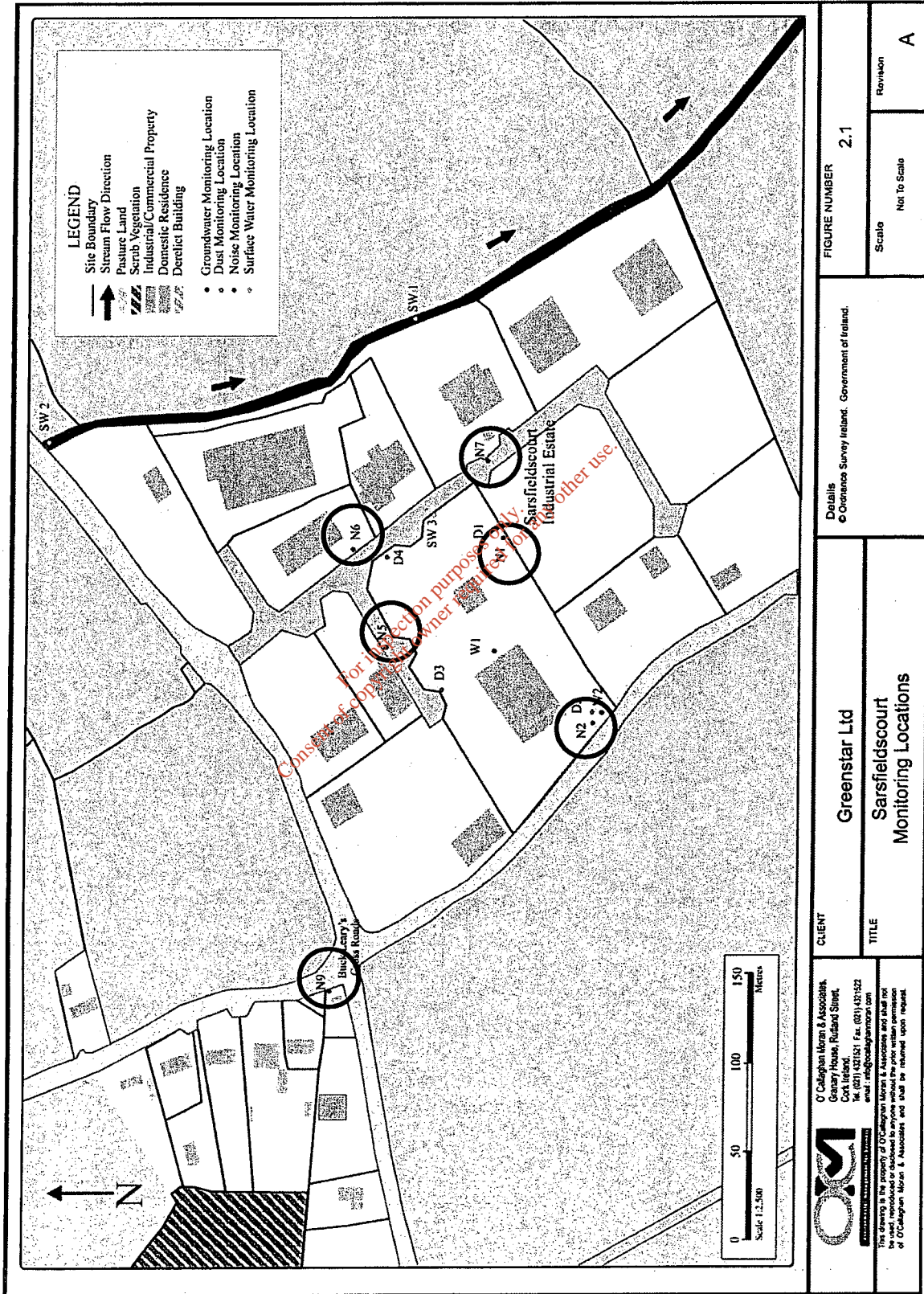
The station locations are indicated in **Appendix 3**.

Schedule D.3

Table D.3.1 Noise Monitoring Frequency and Technique

Parameter	Monitoring frequency	Analysis method/technique
L_{Aeq} 30 min	Annual	Standard ^{Note1}
L_{A10} 30 min	Annual	Standard ^{Note1}
L_{A90} 30 min	Annual	Standard ^{Note1}
Frequency analysis (1/3 octave band analysis)	Annual	Standard ^{Note1}

Note 1: International Standards Organisation ISO1996 Acoustics: Description and measurement of environmental noise Parts 1-3.



Appendix 4: Methodology

Survey	Project ref.	07063
	Purpose	Noise survey re proposed night-time operations
	Locations	N1 N2 N5 N6 N7 N9
	Comment	Facility operating as proposed after 2000 hours
Event	Date	17.09.09
	Day	Thursday
	Time	1840-2000
Operator	On behalf of DixonBrosnan	Damian Brosnan
Conditions	Cloud cover	90%
	Precipitation	0 mm
	Temperature	13 °C
Wind	Speed	0-1 m/s
	Direction	NE
	Measurement	Anemo anemometer 2 m above ground level
Sound level meter	Instrument	Bruel & Kjaer Type 2250-L
	Instrument serial no.	2566801
	Microphone serial no.	2571655
	Application	BZ7130 Version 2.0
	Bandwidth	Broadband
	Max input level	142.66 dB
	Broadband (excl. peak)	Time: FSI Frequency: AC
	Broadband peak	Frequency: C
	Windscreen correction	UA-0237
	Sound Field correction	Free-field
	UKAS calibration	16.01.07
	UKAS calibration certificate	Available on request
	Onsite calibration	Time
Calibration type		External
Sensitivity		41.88 mV/Pa
Post measurement check		93.9 dB
Onsite calibrator	Instrument	Bruel & Kjaer Type 4231
	Instrument serial no.	1723667
	UKAS calibration	14.08.08
	UKAS calibration certificate	Available on request
Monitoring methodology	International Standard ISO 1996	<i>Acoustics: Description and measurement of environmental noise Part 1 (2003) & Part 2 (2007)</i>
	Exceptions	-
	Intervals	10 min

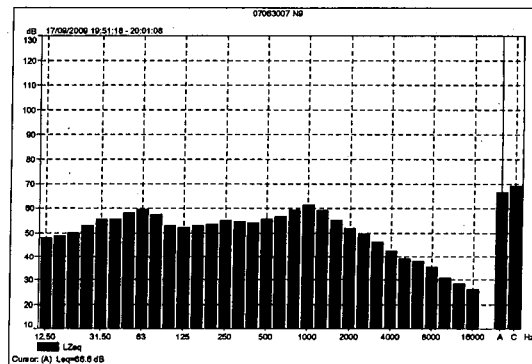
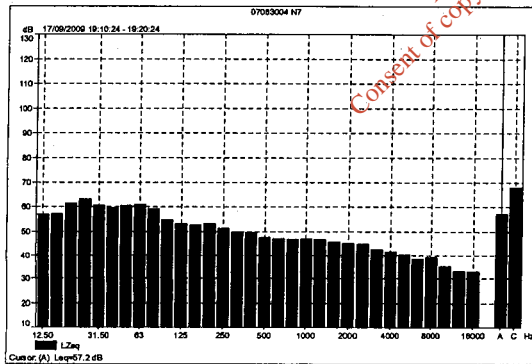
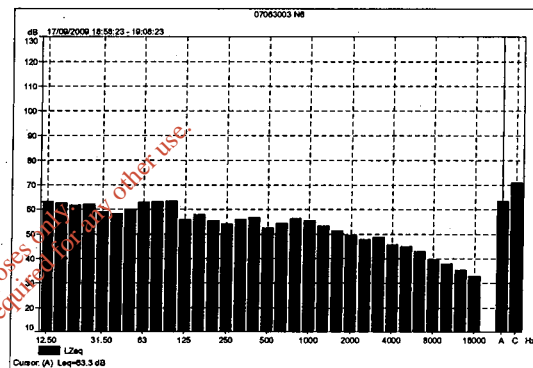
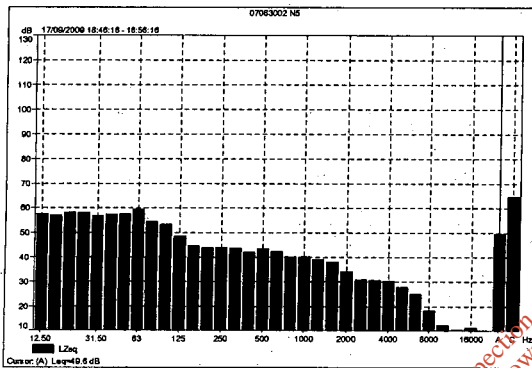
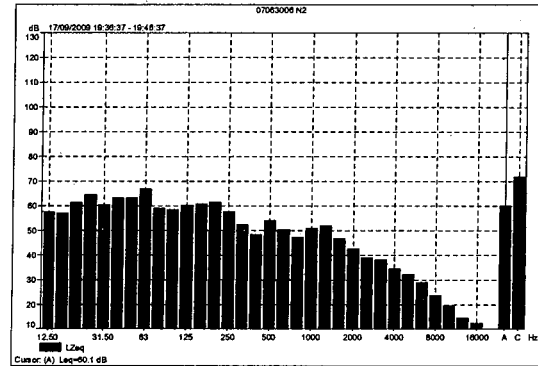
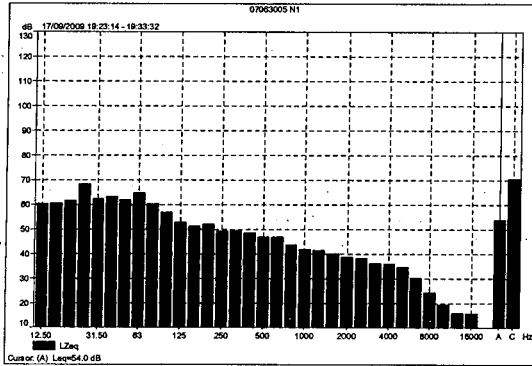
Appendix 5: Noise data

Recorded 17.09.09.

Station	Time	L _{Aeq} 10 min dB	L _{AF10} 10 min dB	L _{AF90} 10 min dB	Noise audible
N1	1923-1933	54	54	51	Odour abatement emissions clearly audible continuously. RPJ pulses also audible. Paused for passing truck onsite 1925. Sporadic vehicle movements on access road audible. Emissions from adjacent waste management premises also audible sporadically.
N2	1936-1946	60	61	59	Genset and compressor on rear facade continuously dominant. RPJ pulses slightly audible. Road traffic outside wall faintly audible.
N5	1846-1856	50	52	47	Continuous emissions audible at low level from odour abatement system, compressor and genset. Sporadic vehicle movements on industrial estate access road. Traffic audible on public roads. Birdsong. RPJ pulses audible.
N6	1858-1908	63	58	44	Odour abatement system continuously audible at low level. RPJ also audible. Sporadic vehicle movements on industrial estate access road. Traffic noise to N audible. Birdsong.
N7	1910-1920	57	56	47	Greenstar odour abatement system slightly audible, screened by wall. Operations at adjacent waste management premises continuously audible and dominant. Traffic on road to N audible. Sporadic vehicle movements on access road.
N9	1951-2000	67	68	38	Road traffic almost continuously audible through junction and on approaches. During lulls, compressor and genset noise at Greenstar faintly audible. RPJ faintly audible with difficulty.

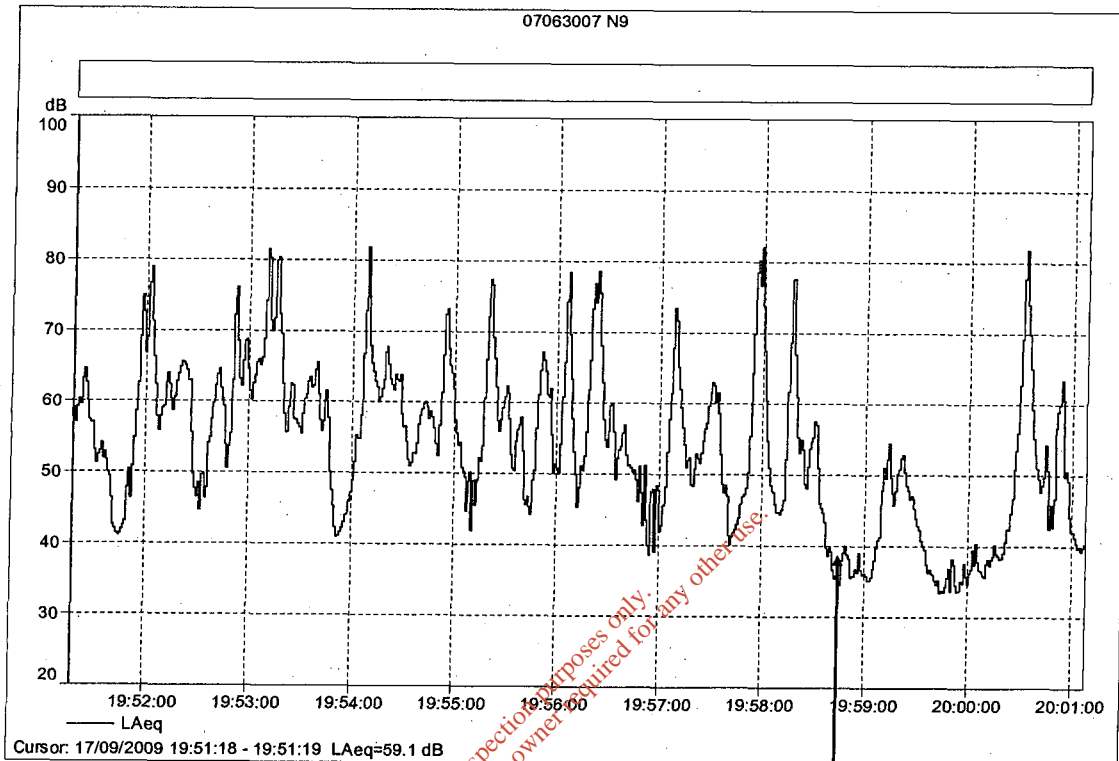
RPJ: Reverse pressure jet

Appendix 6: Frequency spectra



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Appendix 7: N9 time history profile



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Decrease in traffic volume following ending of local football match is evident in greater lulls between individual vehicle movements, thus allowing profile to decrease to background level which is partly attributable to continuous Greenstar emissions.