



Annual Environmental Report 2008

IPPC Licence Register Number	P0443-02
Licensee:	Bulmers Limited
Location of installation	Annerville, Clonmel, Co. Tipperary.

C & C Group

Bulmers Ltd. and Grants of Ireland Ltd.

IPPC Licence Register Number PO443-02

Annual Environment Report 2008

Preface

Bulmers Ltd. and Grants of Ireland Ltd. were granted the Integrated Pollution Prevention and Control Licence, Register Number PO443 - 02, by the Environmental Protection Agency on 1st November 2006, to conduct Commercial Brewing at Annerville, Clonmel, Co. Tipperary.

Site Development necessitated review of the Company's IPC Licence, in accordance with Condition 1.2 of the Licence. Parallel development of the Wastewater Treatment Plant was also completed.

Emissions to Sewer Limits were revised by the Environmental Protection Agency, subject to defined conditions, on 28 November 2006.

Environmental Improvements implemented during 2008 include: -

- Reduction in Waste to Landfill,
- Increased Waste Separation and Recycling,
- Installation of chemical storage compound to ensure improved control of chemicals site wide.
- Installation of a chemical usage monitoring system.
- Upgrade of WWTP - installation of a high ph / high COD balancing tank and apple crushing wastewater treatment system.
- Installation of attenuation pond system
- Completion of well development Project
- Installation of a water monitoring system
- Installation of an energy monitoring system
- Completion of CO2 recovery system

This Annual Environment Report outlines Environmental Performance for 2008.

Bulmers Ltd. and Grants of Ireland Ltd.

IPPC Licence Register Number PO443-02

Annual Environment Report

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Bulmers Ltd. and Grants of Ireland Ltd.
IPPC Licence Register Number PO443-2
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Company Name, Location and IPPC Licence Number

Company Name: C & C Group , Bulmers Ltd. & Grants of Ireland Ltd.

Location of Activity: Annerville,
Clonmel,
Co. Tipperary.

IPPC Licence Register Number: PO443 -2

Section 1.2

Description of Site Activities

Bulmers Ltd. & Grants of Ireland Ltd. was granted the Integrated Pollution Control Licence, Register Number PO443-2 by the Environmental Protection Agency on 1st November 2006.

The Licence authorises the Company to conduct Commercial Brewing at Annerville, Clonmel, Co. Tipperary.

The main unit operations conducted by Bulmers Ltd. at the Annerville Site are as follows: -

- Seasonal Apple Crushing
- Concentrate Fermentation
- Juice Storage
- Product Blending
- Canning
- Kegging
- Bottling
- Storage of Finished Product
- Distribution

A separate IPC Licence (Register Number 444) was granted for the Company's Facility located at Dowd's Lane, Clonmel, Co. Tipperary.

The Company's Product Range includes Bulmers Original Cider, Magners Original Cider, Pear cider, Ritz and Stag.

The CCI Facility, also located at Annerville, conducts the following operations: -

- Product Blending
- Bottling
- Storage

The CCI Product Portfolio includes Carolans Cream Liqueur, Irish Mist and Tullamore Dew.

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Rev. 3
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04/11/2008

Environmental Policy

C&C Group produce and deliver alcoholic beverages for the national and international consumer markets. This Environmental Policy applies to the both the Dowds lane and Annerville sites.

The Company is committed to prevention of pollution, compliance with applicable environmental legislation and to continuous improvement to meet defined standards of environmental performance.

Suppliers and Contractors are encouraged to adopt a similar approach. This policy, and relevant environmental information, is communicated to all persons working for or on behalf of the organisation, and is available to the public.

In recognition of its Environmental Impact, the Company has established a framework for setting and reviewing Environmental objectives and targets.

Key elements of the framework are as follows;

Wastewater Treatment

C&C Group operate to an IPPC licence. The company's wastewater treatment plant ensures treated wastewater meets the criteria outlined in the IPPC licence.

Water Use Reduction

Water is sourced and used responsibly. Water conservation is a key company objective.

Solid Waste Reduction

The company's strategy for waste management is to prevent, minimise, reuse and recycle. All wastes, are handled and disposed of in accordance with legislation and best prevailing industry practice.

Energy Reduction

The company is committed to energy reduction. Energy awareness programmes are conducted on an annual basis.

Air Emissions

Emissions to the air of gas (including greenhouse gases), odours, vapours and noise are monitored in accordance with conditions of IPPC licence. The environmental impact of company owned or subcontracted transport is monitored and minimised.



BULMERS

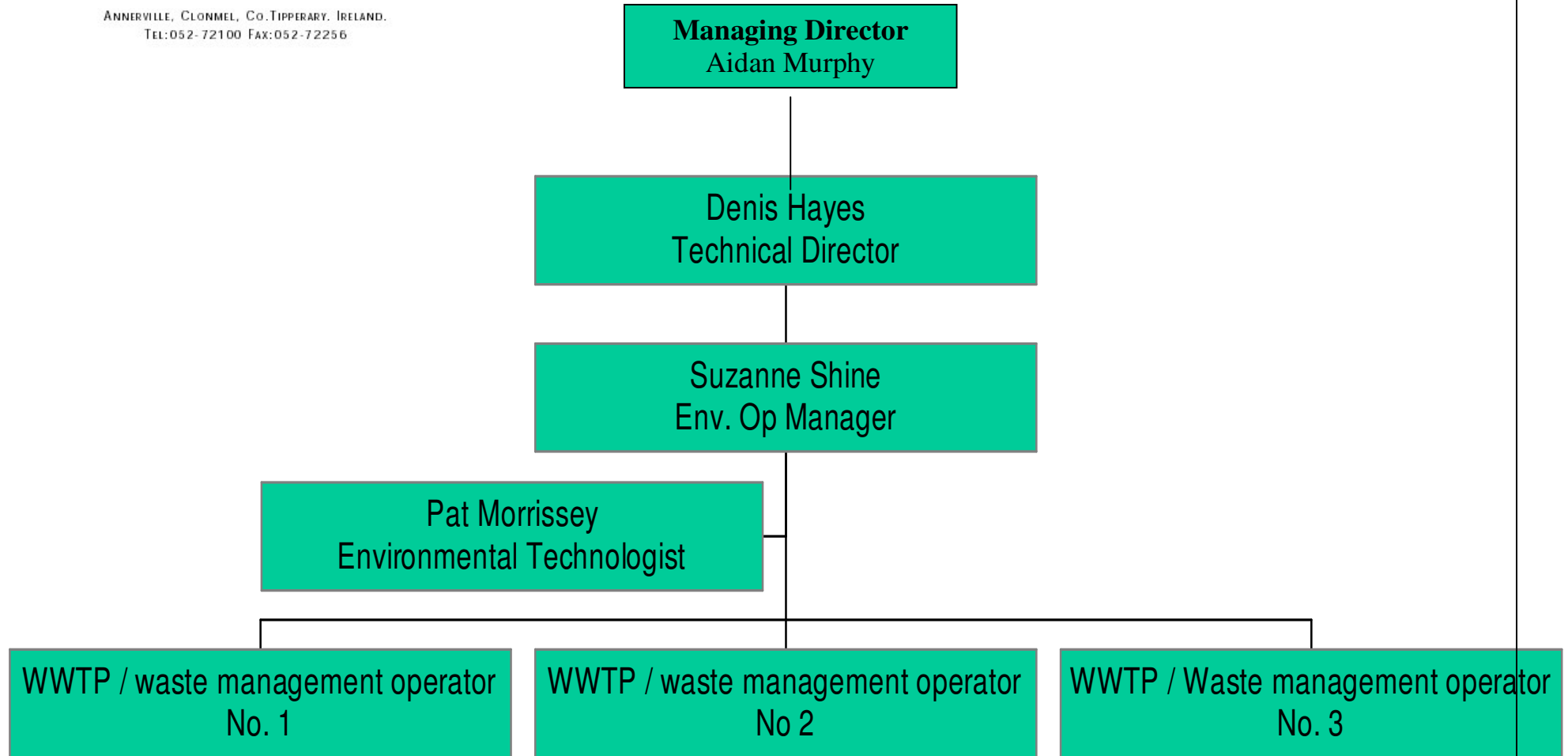
LIMITED

ANNERVILLE, CLONMEL, CO. TIPPERARY, IRELAND.

TEL: 052-72100 FAX: 052-72256

Section 1.4

Environmental Management – Organisation Chart



AER Summary Table

Section 2.1

Summary Of Emissions		
Company		C&C Group PLC
Address		Annerville, Clonmel, Co. Tipperary
Contact Name		Suzanne Shine
Telephone		052 72205
E-mail		suzanne.Shine@candcgroup.ie
GPS Co-ordinates(4N,4E)		0738N, 5223E
IPC Register Number		443
IPC Class		7.00
IPPC Class		
NOSE-P Code		105.03
NACE CODES	Section	D
	Sub-Section	A
	Division	15
	Group	15.9
	Class	15.94

Process Emissions to Waters If Emissions to Waters do not apply to your license, please tick here

Indicate Yes if emissions are to: **Freshwater** **or Sewer**

Parameter	No		Yes		
	Unit	Max. Licensed Emission per year	2008	2007	2006
Volume	M ³ /yr	472770	338931.5	346951	333728
Suspended Solids	Kg/yr	213000	9553	20,102	20745
BOD	Kg/yr	416864	12003.3	127128	110776
COD	Kg/yr	Not Applicable	N/A	N/A	N/A
Total Dissolved Solids	Kg/yr	Not Applicable	N/A	N/A	N/A
Total Nitrogen	Kg/yr	Not Applicable	N/A	N/A	N/A
Orthophosphate	Kg/yr	1182	214	416	277.0225
Toxicity	Max. TU	Not Applicable	N/A	N/A	N/A
Total Heavy Metals	Kg/yr	473	52	40.95	133.5048
Hg	Kg/yr	Limit for Total Metals defined only	0.021	0.017	37.38134
Cd	Kg/yr	Limit for Total Metals defined only	12.1	13.8	6.67524
Pb	Kg/yr	Limit for Total Metals defined only	0.24	0.34	0.016688
Cr	Kg/yr	Limit for Total Metals defined only	22	28.17	6.67524
As	Kg/yr	Not Applicable	N/A	N/A	N/A
Zn	Kg/yr	Limit for Total Metals defined only	6.21	8.1	50.69845
Cu	Kg/yr	Limit for Total Metals defined only	3	3.47	6.67524
Ni	Kg/yr	Limit for Total Metals defined only	0.82	0.69	7.342764
% Compliance	%		99	99	98
Number of samples			1481	1488	1488

Emissions to air If Emissions to Air do not apply to your license, please tick here

Parameter	Unit	Max. Licensed Emission per year	Yes		
			2008	2007	2006
Particulates	Kg/yr	Not Applicable			
Sox	Kg/yr	Not Applicable			
Nox	Kg/yr	Not Applicable			
CO ₂	Kg/yr	Limit not Defined	10758	14168	11038
TA Luft Class I	Kg/yr	Not Applicable			
TA Luft Class II	Kg/yr	Not Applicable			
TA Luft Class III	Kg/yr	Not Applicable			
Total Organic (as C)	Kg/yr	Not Applicable			
Non-Methane VOC	Kg/yr	Not Applicable			
Ammonia	Kg/yr	Not Applicable			
Total Heavy Metals	Kg/yr	Not Applicable			
% Compliance	%				
Number of samples					

Boiler Emissions to air		If Boiler Emissions do not apply to your license, please tick here			
Parameter	Unit	Max. Licensed Emission per year	2008	2007	2006
Dust	Kg/yr				
Sox	Kg/yr				
Nox	Kg/yr		170		
CO2	Kg/yr		8.76		
CO	Kg/yr		0.33		

Energy Usage

Energy Consumption	Sulphur Content	Unit	2008	2007	2006
Heavy Fuel Oil		M ³ /yr			
Light Fuel Oil	0.15	M ³ /yr	7	23	20
Natural Gas		KWHR	21494177	25688442	24325820
Electricity		KWHR	15197060	15764888	14030931
LPG		KWHR	1,650,473	4,251,460	2,462,058
Coal		Kg/yr			

Environmental Complaints

		2008	2007	2006
	Complaints received	0	0	0
	Complaints requiring corrective action	0	0	0

Categories of complaint

		2008	2007	2006
	Odour	0	0	0
	Noise	0	0	0
	Water	0	0	0
	Air	0	0	0
	Procedural	0	0	0
	Miscellaneous	0	0	0

Water

	Unit	2008	2007	2006
On-site groundwater use	m ³ /yr	523469	467113	408737
On-site surface water use	m ³ /yr	0	0	0
Municipal water use	m ³ /yr	27466	49947	110291

Accreditation

EMAS (Yes/No)	No
ISO 14000 Series (Yes/No)	yes
Certification Pending (Yes/No)	No

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Boiler Combustion Efficiency

Emission Point Reference Numbers:

A3-1, A3-2 A3-3

	2005			2006		
	High Fire Efficiency %	Med. Fire Efficiency %	Low Fire Efficiency %	High Fire Efficiency %	Med. Fire Efficiency %	Low Fire Efficiency %
	07.06.05			19.06.06		
Boiler No. 01	80.4	81.6	82.6	81.7	81.8	82
Boiler No. 02	80.9	81.4	82.3	81.3	81.7	81.4
	14.12.05			04.12.06		
Boiler No. 01	82.2	81.2	81.8	82	82	81.8
Boiler No. 02	81.2	81.9	81.2	81.6	81.5	81.8

Table 2.2 Combustion Efficiency Summary

	2007								
	Low Fire Efficiency %			Med. Fire Efficiency %			High Fire Efficiency %		
	15.01.07			15.01.07			15.01.07		
	Test 1	Test 2	Test 3	Test 1	Test 2	Test 3	Test 1	Test 2	Test 3
Boiler Gas Only	89.1	89.2	89.2	89.8	89.7	89.7	90.2	89.6	90.5
Boiler Dual Fuel	90.7	91.2	90.4	91.6	91.9	91.7	90.1	88.8	88.7
Boiler Vistoplex	95	94.4	93.9				92.9	92.2	92.2

	2008								
	Low Fire Efficiency %			Med. Fire Efficiency %			High Fire Efficiency %		
	04.06.08			04.06.08			04.06.08		
	Test 1	Test 2	Test 3	Test 1	Test 2	Test 3	Test 1	Test 2	Test 3
Boiler Gas Only	90.3	90.3	90.7	90.4	90.1	90.3	89.7	89.6	90
Boiler Dual Fuel	90.7	89.6	89.6	90.7	90.9	90.2	89	89.3	89

Boiler Vistoplex	93.1	91.9	91.4	91.3	90.9	90.7	90.8	90.3	90.2
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IPPC Licence Register Number Section 2.3

Carbon Dioxide Emissions to Atmosphere Summary

Area/ Process		2006	2007	2008
		Tonnes	Tonnes	Tonnes
Fermentation ¹	(Tonnes per Year)	9553	13225	9919
Process Loss ²	(Tonnes per year)	1485	943	839
Cumulative	(Tonnes per Year)	11038	14168	10758

CO2 recovery system

CO2 recovery system commissioned on site in June 2008.

In 2008, recovered 1200 tonnes using CO2 recovery system, so actual emissions of CO2 reduced to 9558 tonnes.

The Method of Calculation of CO₂ Emissions is outlined in the Pollution Emission Register Report (Section 3.5)

Note:

¹ CO₂ is a by product of fermentation

² CO₂ is utilised as a process aid, for Tank Pressurizing, Product Filling, Fermentation Control

Emissions to Sewer - Summary Report																
IPC Licence Register Number 443																
	Jan-04	Feb-04	Mar-04	Apr-04	May-04	Jun-04	Jul-04	Aug-04	Sep-04	Oct-04	Nov-04	Dec-04	Average	Total	Jan-05	Feb-05
Volume (m ³)	17338	17047	20166	18555	20434	19852	21491	23066	22665	24994	25250	18195	20754	249053	20580	14182
Temperature													#DIV/0!	19	15	15
pH	7.90	7.98	8.01	8.13	8.14	8.06	8.06	7.25	7.88		7.94	6.80	8	8	7.53	6.64
Settled BOD (kg/yr)	46.45	80	93	98.69	452.96	25.74	38.82	198.18	115.26	200.78	97.34	422.01	156	1869	814.00	436.00
Suspended solids (kg/l daily)	0.11			0.05	1.00	0.37	0.11	0.26			8.30	2.00	2		14.50	6
Sulphates (as SO ₄)	0.23			0.69				1.61			1.35		1	242	1.53	
Detergents (as MBAS)	0.04			0.12				1.22			0.71		1	130	0.01	
Fats, oils and grease	1.00			9.00				10.00			0.50		5	1276	2.00	
Ammonia (as N)	0.08	0.05	0.60	0.05	0.05	0.05	1.50	1.60	0.15	0.19	0.14	0.21	0	97	4.06	0.05
Orthophosphate (as P)	0.07	0.19	0.46	0.07	0.32	0.07	4.20	1.70	0.63	0.91	0.35	0.42	1	195	0.32	0.35
Total Metals in mg/l												6.1	6	73		
Lead (as Pb) ug/l													#DIV/0!	#DIV/0!		
Zinc (as Zn) ug/l													#DIV/0!	#DIV/0!		
Mercury (as Hg) ug/l													#DIV/0!	#DIV/0!		
Chromium (as Cr)ug/l													#DIV/0!	#DIV/0!		
Copper (as Cu) mg/l													#DIV/0!	#DIV/0!		
Nickel (as Ni) ug/l													#DIV/0!	#DIV/0!		
Cadmium (as Cd) ug/l													#DIV/0!	#DIV/0!		

Emissions to Sewer - Summary Report											
IPC Licence Register Number 443											
	Mar-05	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05	Oct-05	Nov-05	Dec-05	Total
Volume (m ³)	18407	25699	20542	23205	27518	27683	27266	32145	27256	20558	285040
Temperature	16	18.74206897	21	25.10	25.71	25.2516129	23.93433333	22.10516129	20.43357143	18.62448276	21
pH	8.26	8.15	8.18	8.04	8.16	7.95	8.22	7.83	7.94	8.02	8
Settled BOD (kg/yr)	302.00	1042.00	3774.00	604.00	658.00	605.00	632.00	2,472.00	7,274.00	3,956.00	22569
Suspended solids (kg/l daily)	14	78	22	27	10	11.00	14.15	103.84	49.33	49.33	9484
Sulphates (as SO ₄)		1.00	1.00			1.00	2.10			1.00	362
Detergents (as MBAS)		0.01	0.16				0.01			0.29	27
Fats, oils and grease		9.50	4.80			15.00				17.20	2764
Ammonia (as N)	1.95	0.0415	0.9275	1.77	0.05	4.78	0.34	0.07	0.18	0.22	343
Orthophosphate (as P)	0.95	0.66	0.70	1.30	0.22	0.59	0.20	0.53	0.90	1.63	198
Total Metals in mg/l	0.305						0.057				103
Lead (as Pb) ug/l	0.002					0.01	0.0078				6
Zinc (as Zn) ug/l	0.227					0.257	0.001				138
Mercury (as Hg) ug/l	0.00005					0.00065	0.00025				0
Chromium (as Cr)ug/l	0.002					0.002	0.002				2
Copper (as Cu) mg/l	0.002						0.001				1
Nickel (as Ni) ug/l	0.002						0.005				2
Cadmium (as Cd) ug/l	0.0002					0.001	0.0406				12

Emissions to Sewer - Summary Report											
IPC Licence Register Number 443											
	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06
Volume (m ³)	22473.00	18073.00	25692.60	24918.90	24569.10	23458.20	28081.30	23828.30	31535.00	39348	39527
Temperature	16.54	16.35	17.33	19.76	22.05	25.71	29.41	27.82	25.29	25.39	19.71
pH	8	8	8.07	7.67	7.4	8.53	8.03	7.27	7.5	8.44	8.28
Settled BOD (kg/yr)	3181.67	2434.06	3669.85	594.20	1172.92	956.06	12749.00	20420.68	50993.14	9508.587	3857.6425
Suspended solids (kg/l daily)	636.66009	530.0811	1194.678	365.5471	777.2366	800.6215	3037.662	2104.727	3299.822	1039.478	3290.48289
Sulphates (as SO ₄)	1			1					18.1		
Detergents (as MBAS)	0.25			0.022					0.32		
Fats, oils and grease	8			8.4					1		
Ammonia (as N)	0.05	0.05	0.05	0.16	0.13	0.13	0.17	0.46	0.16	0.52	0.05
Orthophosphate (as P)	0.19	0.11	0.13	0.1	0.13	0.9	0.07	0.1	0.34	2.5	0.57
Total Metals in mg/l						0.4					
Lead (as Pb) ug/l						0.112					
Zinc (as Zn) ug/l						0.1519					
Mercury (as Hg) ug/l						0.00005					
Chromium (as Cr)ug/l						0.02					
Copper (as Cu) mg/l						0.02					
Nickel (as Ni) ug/l						0.022					
Cadmium (as Cd) ug/l	0.08					0.02					

Emissions to Sewer - Summary Report												
IPC Licence Register Number 443												
	Sep-07	Oct-07	Nov-07	Dec-07	Total-07		Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08
Volume (m ³)	28300	31595	30735	19564	346951		20659	23779	27124.6			
Temperature	23.3	21.3	18.6	16.9	21.5		14.9	14.3	15.7			
pH	8.5	8.5	8.2	9	8.1		8.2	8.1	8.25			
Settled BOD (kg/yr)	1819	745	611	992.9	127128.1		577.6	469.7	358.1			
Suspended solids (kg/l daily)	1552	985	415	1228	20102	20102	731.1	853.8	463.5			
Sulphates (as SO ₄)			1		8.4	2914.3884	1.06					
Detergents (as MBAS)					0.055	17.34755						
Fats, oils and grease			1.2		1.533333	520.4265	4.2					
Ammonia (as N)	0.7	0.1	1.1	1.8	0.8	277.5608	0.1	1.7	0.1			
Orthophosphate (as P)	1.3	1.2	0.3	1.3	1.2	416.3412	0.7	2.1	0.5			
Total Metals in mg/l			0.11805		0.118	40.95756555						
Lead (as Pb) ug/l			0.001		0.001	0.346951	2.4					
Zinc (as Zn) ug/l			0.0235		0.024	8.1533485	10					
Mercury (as Hg) ug/l			0.00005		0.000	0.01734755	0.05					
Chromium (as Cr)ug/l			0.0812		0.081	28.1724212	3.2					
Copper (as Cu) mg/l			0.01		0.010	3.46951	0.01					
Nickel (as Ni) ug/l			0.002		0.002	0.693902	5.6					
Cadmium (as Cd) ug/l			0.0003		0.040	13.87804	0.8					

Emissions to Sewer - Summary Report						
IPC Licence Register Number 443						
	Jul-08	Aug-08	Sep-08	Oct-08	Nov-08	Dec-08
Volume (m ³)						
Temperature						
pH						
Settled BOD (kg/yr)						
Suspended solids (kg/l daily)						
Sulphates (as SO ₄)			1			
Detergents (as MBAS)						
Fats, oils and grease						
Ammonia (as N)						
Orthophosphate (as P)						
Total Metals in mg/l						
Lead (as Pb) ug/l						
Zinc (as Zn) ug/l						
Mercury (as Hg) ug/l						
Chromium (as Cr)ug/l						
Copper (as Cu) mg/l						
Nickel (as Ni) ug/l						
Cadmium (as Cd) ug/l						

IPC License Register Number PO 443 – 02
Section 2.5 - Emissions to Sewer: Non-Compliance Summary 2008.

Total Number of Exceedences = 0 exceedences of IPPC licence Limits.

Organic Waste Register Summary

Type	Recovery Agent	Application	Quantity in Tonnes					2007	2008
			2003	2004	2005	2006	2007		
Sludge	Landfeeds Environmental Ltd., Ballyragget, Co. Kilkenny	Landspreading	1,618	1,949	2474	2145	2103	1188.4	
Apple Waste	Landfeeds Environmental Ltd., Ballyragget, Co. Kilkenny	Landspreading	293	459	665	1823	1313	0	
Total			1,911	2,408	3140	3968	3416		

Section 2.10 - Surface Water Discharge Monitoring
 Bulmers Ltd. Grants of Ireland Ltd.

Reg. No. 443

Emission Reference Point: SW2

Discharge Monitoring Point Location: S36

Monitoring Period: Jan - Dec 2008

Ref : Daily inspection of storm water Emissions ref 18. 12.50

Date	pH	oC	Visual	COD mg/l
	6.8 - 8.0	<40	Inspection	Spec. 60mg/l
3-Jan-08	7.21	17	Clear liquid	50
29-Jan-08	6.35	14	Clear liquid	56
5-Feb-08	6.92	15.00	Clear liquid	41
3-Mar-08	6.30	16	Clear liquid	35
10-Mar-08	7.30	14	Clear liquid	43
29-Apr-08	7.18	15	Clear liquid	18.9
8-May-08	7.12	14	Clear liquid	51
12-May-08	7.11	14	Clear liquid	48
19-May-08	7.54	13	Clear liquid	30.4
21-May-08	7.60	14	Clear liquid	60
22-May-08	7.90	15	Clear liquid	19
23-Jun-08	6.55	16	Clear liquid	13.8
7-Jul-08	6.62	16	Clear liquid	57
15-Jul-08	6.92	17	Clear liquid	36
25.07.08	6.30	16	Clear liquid	39
28.07.08	6.8	15	Clear liquid	63
12.08.08	7.01	16	Clear liquid	46
13.08.08	6.8	15	Clear liquid	25
14.08.08	6.3	15.5	Clear liquid	15
19.08.08	6.4	14.8	Clear liquid	35.5
25.08.08	7.4	14.8	Clear liquid	45
03.09.08	7.2	14.5	Clear liquid	34
08.09.08	6.9	14	Clear liquid	43
11.09.08	7.01	13.8	Clear liquid	40
21.08.08	7.2	13.7	Clear liquid	15.5
3-Sep-08	6.4	12.8	Clear liquid	48.7
23/10/2008	6.9	12	Clear	54
24/10/2008	7.4	12	Clear	30
29/10/2008	7.30	14	Clear	35
30/10/2008	6.90	10	Clear	41
2/11/2008	7.12	14	Clear	42
3/11/2008	7.23	12	Clear	25
4/11/2008	7.45	13	Clear	53
5/11/2008	7.24	11	Clear	48
6/11/2008	7.18	13	Clear	41
9/11/2008	7.18	13	Clear	54
10/11/2008	7.23	12	Clear	35
16/11/2008	7.14	14	Clear	41
17/11/2008	6.92	13	Clear	43
24/11/2008	7.12	12	Clear	50
26/11/2008	7.32	10	Clear	41
31/11/2008	7.62	11	Clear	36
1/12/2008	7.68	10	Clear	23
2/12/2008	7.24	10	Clear	42
7/12/2008	7.18	11	Clear	41
8/12/2008	7.23	10	Clear	45
10/12/2008	7.25	12	Clear	10
14/12/2008	7.18	11	Clear	20
16/12/2008	7.23	10	Clear	40
17/12/2008	7.34	12	Clear	72

Parameter	Max.	Min.	Average	
ph	7.30	6.30	6.82	
Temp	17.00	14.00	15.20	
COD	56.00	35.00	45.00	

Section 2.11

Groundwater Monitoring Summary

There are 4 wells available for use. Only three of these wells are in use at any one time

All production wells are monitored for sensory, microbiological and chemical quality on a daily, weekly and monthly basis respectively.

See section 4.7 for drinking water directive results for PW3, RW1, RW3 and RW4.

IPPC Licence Register Number PO443-02 Annual Environment Report

Section 2.12

Agency Monitoring and Reporting

1. Emissions Sampling - Discrepancy

Results for Samples of Final Wastewater, as discharged to Sewer, and analysed by the Environmental Protection Agency refer to all parameters as outlined on schedule Schedule B(3) of the Company's IPC Licence

Oxidised Nitrogen, Nitrite and Chloride are all analysed.

Class of activity: 7.3, Commercial brewing and distilling, and malting in installations where the production capacity exceeds 100,000 tonnes per year

Sampling location: IPC-P0443-01-CS-1a, Showerings- P0443-01-CS-1a- Discharge to Sewer (Jan- December 2007).

Parameter	Units	Limits	Dates Sampled			
			21/01/2008	22/05/2008	14/08/2008	15/12/2008
Flow	m3/hr	<60	nm	1440	912	483
Temp		<40	nm	24	nm	nm
BOD	mg/l		10.3	18.9	nm	8.7
COD	mg/l		53	65	38	45
Ammonia (as No)	mg/l	<10	0.11	0.008	4.7	14
Chloride			52	37	8.4	49
Nitrite	mg/l		1.5	0.37	0.76	0.4
Orthophosphate (as P)	mg/l	<2.5	3.1	2.1	38	2.6
Total oxidised Nitrogen			62	4.1	4.7	2.9
ph			8.4	8.3	8.4	8.6
Suspended solids	mg/l		11	11	17	n/a

External analysis - Envirolab

Date	Parameter	
	Ammonia	Orthophosphate
*1.2 times ELV	12mg/l	3.0mg/l
Limits	<10mg/l	<2.5mg/l
09/01/2008	0.10	0.7
27/02/2008	1.70	2.1
12/03/2008	0.10	0.5
30/04/2008	0.40	1.4
16/05/2008	2.92	3.26
05/06/2008	3.3	2.3
05/07/2008	3.3	
11/07/2008		2
30/08/2008	0.5	
11/09/2008	0.2	2.1
18/09/2008	0.7	2.3
02/10/2008	0.2	0.2
09/10/2008	0.2	1.6
06/11/2008	0.2	1.9
05/12/2008	6.6	2.4
18/12/2008	0.5	0.5
29/01/2008	0.63	0.3
05/02/2008	0.3	0.65

Note 4.1.2 Composite sampling - NO individual result similarly calculated shall exceed 1.2 emission limit value

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Section 2.13**

Environmental Non Compliance Summary 2008

Emissions to Sewer Non Compliances and Corrective Actions are outlined in Section 2.5

Date	Description	Non Compliance Category					Investigation / Notification
		Emissions to Sewer	Noise	Monitor Equipment	Discharge to Surface Water	Environmental Complaint	
See section	N/A	0	0	0	0	0	EPA and Clonmel Borough Council notified

Table 2.13 Environmental Incident Summary 2007

IPC Licence Register Number 443
Energy/ Resource Usage Summary

Section 2.15

Resource	2008	2007	2006	2005	2004
Diesel (m³ / year)	n/a	N/A	353	467.8	469
Gas (m3 / year)	21,494,177	25,688,442	1,806,408	1,597,349	1,158,279
Electricity (MWhr / year)	15,197,060	15,764,888	13250	10000	8297
Carbon Dioxide (tonnes purchased/ year)		4483	7600	4852	3856
Heating Oil (m³/ year)	7	23	20	24.7	32

Table 2.15 Energy/ Resource Usage Summary

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Water Consumption Summary - section 2.16

Water Source	2004	2005	2006	2007	2008
	m³ per year	m³ per year	m³ per year	m³ per year	m³ per year
Groundwater Supply	290383	357439	408737	467113	523,461
Municipal Supply	65066	80193	110000	49947	27,784

Table 2.16 Water Consumption Summary

Section 3.1

Schedule of Environmental Objectives and Targets

Bulmers Ltd., Grants of Ireland Ltd.

IPC Licence Reg. No. 443

1.0 INTRODUCTION

The following *Schedule of Environmental Objectives and Targets* was prepared in fulfilment of Condition 2.2 of IPC Licence Reg. No. 443, concerning the activities of Bulmers Limited, Grants of Ireland Limited, located at Annerville, Clonmel, Co. Tipperary.

Bulmers Limited is operating under Integrated Pollution Control (IPC) Licence from the Environmental Protection Agency, granted March 29th, 2001, to carry out the activity of commercial brewing.

2.0 REFERENCE

Integrated Pollution Control Licence Reg. No. 443 - Condition 2.2:

2.2.1 The Licensee shall prepare a schedule of Environmental Objectives and Targets. The schedule shall include time frames for the achievement of set targets. The schedule shall address a five-year period as a minimum. The schedule shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER)

2.2.2 *The Licensee shall have regard to those matters listed in the appropriate section of Schedule 5(I) Recording and Reporting to the Agency when establishing the schedule of Objectives and Targets.*

3.0 ENVIRONMENTAL OBJECTIVES AND TARGETS

3.1 *Schedule of Environmental Objectives and Targets*

Consistent with the defined Company Environmental Policy, and the requirements of IPC Licence Reg. No. 443, specifically those defined in Schedule 5(i), the Company proposes the following Environmental Objectives and Targets

EMP CODE	OBJECTIVE CODE	OBJECTIVE TITLE	TARGET	START DATE	REVIEW DATE	RESPONSIBILITY
EMP 01	OBJ 01B	Reduce well water consumption and the generation of wastewater.	10% reduction in well water usage per million Liters produced by year-end 2009. 2008 Well-Water Usage: 3161 m ³ /million litres produced 2009 Target: 2,845m ³ / million litres produced.	January 2009	Monthly	S.Shine
EMP 02	OBJ 03B	Reduce Towns Water usage.	Reduce towns water consumption by 5% for 2009 vs. 2008. 2008 Town Water Usage: 151 m ³ /million litres produced 2009 Target: 144 m ³ /million litres produced	January 2009	Monthly	P.Morrissey

EMP 03	OBJ 03A	Reduce waste sent to landfill for Bulmers.	10% reduction in waste to landfill per million Litres of Bulmers product produced vs.2008 2008 Waste to Landfill: 0.89Tonnes / Million Litres 2009 Target: 0.80 Tonnes/Million Litres	January 2009	Monthly	P.Morrissey
EMP 03	OBJ04A	Reduce disposal and recycling costs.	20% reduction in glass per million litres of bottled product in 2008 vs 2007. (2008: 19,215 Kg / Million Litres Produced) 2009 Target: 15,372 Kg/Million Litres Produced	January 2009	Monthly	P.Morrissey
EMP 03	OBJ04A	Reduce cardboard disposal and recycling costs.	Introduce measures so as not to exceed 2008 waste volumes for cardboard. (2008: 5,597 Kgs Cardboard per Million Litres Produced)	January 2009	Monthly	P.Morrissey
EMP 03	OBJ04A	Reduce plastic disposal and recycling costs.	Introduce measures so as not to exceed 2008 waste volumes for plastic. (2008: 1,460 Kgs plastic per Million litres Produced)	January 2009	Monthly	P.Morrissey
EMP 05	OBJ04B	Reduce aluminum disposal and recycling costs.	5% reduction in aluminium per million litres of canned and bottled product in 2009 vs 2008. (2008: 3,456 Kgs of Aluminium Recycled per Million litres Produced) 2009 Target: 3,110 Kgs of Aluminium Recycled per Million litres Produced	January 2009	Monthly	S.Shine,

EMP 06	OBJ 05A	Reduce Electricity consumption	15% reduction in electricity consumption for 2009 vs. 2008 for product produced 2008: 89,479 kWh used per million litres produced. 2009 Target: 76,057 kWh per million litres produced.	January 2009	Monthly	P.Morrissey
EMP 06	OBJ 05B	Reduce Natural Gas Consumption	10% reduction in natural gas consumption for 2009 vs. 2008 for product produced 2008: 126,555 kWh used per million litres produced. 2009 Target: 113,900 kWh per million litres produced.	January 2009	December 2009	P.Morrissey
	OBJ 06A	Introduce a site wide effective Environmental Awareness Training programme.	Enhance environmental awareness training within operations. Ensure 80% of people within operations will have received ISO 14001 Awareness Training and job specific training by Sept 2009.	January 2009	December 2009	P.Morrissey

Significant Aspect: EMP 01 – WellWater Usage Reduction.		Owner: Suzanne Shine		
Department/Area(s): Sitewide		Process/Activity: All applicable		
Objective: Reduce wellwater consumption and the generation of wastewater.		Target: 10% reduction in wellwater usage per million litres produced by year end 2008. (Target = 2046 m ³ /million litres produced)		
Date: 18 th January 2008				
Team Members: Suzanne Shine, Pat Morrissey, Gary Tantrum, Piotr Kuytz				
Program Plan: Wellwater Usage Reduction Programme				
Task	Responsible Party	Schedule	Performance Monitoring	Comments
Identify areas, operations, processes or machinery that contribute to significant water usage.	SS/ PM	January 2008	Complete	N/A
Implement site wide water-shutdown procedure for non-production hours	Gary Tantrum	Feb 2008	Weekend & Overnight water usage to be recorded.	N/A
Site water system has been mapped to give clearer picture of water piping network.	C.Jones (U.K. Eng)	Feb.2008.		
Identify suitable locations for the installation of 14 new flowmeters, which will generate automatic reports.	P.Morrissey	January 2008	Installation completed.	

Task	Responsible Party	Schedule	Performance Monitoring	Comments
Daily wellwater usage per area is recorded and a report is issued to all section managers weekly. High users are targeted for reduction projects.	P.Morrissey	Ongoing	Daily	
Assess possibility of recycling water used in certain operations. i.e. from bottle rinsers, bottle washers, can pasteuriser, CO ₂ recovery, PF Filters, CIP Pre-rinses.	P.Morrissey, D.Ryan (Water Tech)	April 2008	Discharge samples from various processes are being tested for reuse suitability.	
Ongoing Project: Installation of water control valve on CO ₂ Gas Washer. This will ensure that the aerosol gas washer only uses the required amount of water for any cycle.	G.Tantrum	December 2008	Price being agreed. (Dec.2008)	

Significant Aspect: EMP 02 – Reduce Towns Water Usage		Owner: Pat Morrissey		
Department/Area(s): Sitewide		Process/Activity: All applicable		
Objective: Reduce Towns Water Usage		Target: Reduce Towns Water Usage by 5% for 2008 vs. 2007. 2008 Target: 50,528 m ³ 2008 Usage: 28,000m ³		
Date: 23 rd January 2008				
Team Members: Pat Morrissey, Suzanne Shine, Simon Thompson, Ger Foxe, Frank O'Rourke				
Program Plan: Town Water Reduction Programme				
Task	Responsible Party	Schedule	Performance Monitoring	Comments
Identify areas where wellwater can be used in place of town water.	F.O'R. & G.F.	March 2008	Complete	N/A
Main area where town water is used is Grants Factory. RO water replaces town water for splitting of whiskey.	PM.	March 2008	Complete	N/A

Task	Responsible Party	Schedule	Performance Monitoring	Comments
Town water usage is monitored weekly and reported monthly to management.	P.Morrissey	Ongoing.	Daily	

Bulmers and Grants Of Ireland Ltd
Environmental Management Program Register
Ref. 18.00.03c

Significant Aspect: EMP 03 – Reduce Waste to Landfill		Owner: Pat Morrissey		
Department/Area(s): Sitewide		Process/Activity: All applicable		
Objective: Reduce waste sent to landfill for Bulmers.		Target: 14% reduction in waste sent to landfill per million litres of product produced vs. 2007. 2008 Target: 1.52Tonnes / Million Litres 2008 Actual: 0.89 Tonnes / Million Litres		
Date: 21 st January 2008				
Team Members: Pat Morrissey, Suzanne Shine, Michael Herlihy, Donie O'Regan, Stefan Fahey, Adam Orlowski, John Hunt,				
Program Plan: Landfill Reduction Programme				
Task	Responsible Party	Schedule	Performance Monitoring	Comments
Develop recycling culture/awareness sitewide. Implement recycling initiatives in canteen.	S.S. & P.M.	June 2008	Ongoing	N/A
Develop sitewide colour coding of bins. Yellow – General waste Green - Glass Blue - Aluminium	S.S. & P.M.	March 2008	Ongoing	N/A

Bulmers and Grants Of Ireland Ltd
Environmental Management Program Register
Ref. 18.00.03c

Task	Responsible Party	Schedule	Performance Monitoring	Comments
Improve strategic placement of balers, compactors and cages to ensure employees can use them easily and effectively and improve source segregation.	All	April 2008	Ongoing	
Reduce % of waste to Landfill and hence improve recycling rates. Audit potential waste management contractors on site, service, recycling facilities and commitment to “zero waste to landfill”. Result: Reduce Carbon Footprint	Suzanne Shine / Patrick Morrissey	April 2008	Ongoing	Scheduled site visits to Greenstar (Kilkenny) and Mr. Binman (Kilmallock)
Installation of glass bin-lifter outside CCI packaging facility.	Suzanne Shine	August 2008	Installed	
Waste Characterisation study carried out by Mr. Binman Environmental Officer to identify source of waste being sent to landfill.	Suzanne Shine / Margaret Egan	October 2008	Produced list of waste types which are going to landfill.	

**Bulmers and Grants Of Ireland Ltd
Environmental Management Program Register**

Significant Aspect: EMP 04 - Energy Usage.		Owner: Pat Morrissey		
Department/Area(s): Sitewide		Process/Activity: All applicable		
Objective: Reduce energy consumption		Target: Continuous Improvement		
Date: 15 th January 2008				
Team Members: Pat Morrissey, Suzanne Shine, Michael Herlihy, Frank O'Rourke, Ger Foxe, Simon Thompson Vincent Ryan, Kieran Dunne, Gary Tantrum				
Program Plan: Energy Reduction Program				
Task	Responsible Party	Schedule	Performance Monitoring	Comments
Site Audit – Benchmark	F.O'R. & G.D.	April 2008	Complete	N/A
Compile Data Figures for 2008 Benchmark Figures	C.R. & G.D.	Ongoing	Complete	N/A
Establish On Site Energy Management Team	F.O'R. / PM	January 2008	Complete	N/A
Install Meters on Energy Usage Points	PM	May 2008	Complete	N/A

**Bulmers and Grants Of Ireland Ltd
Environmental Management Program Register**

Task	Responsible Party	Schedule	Performance Monitoring	Comments
Installation of Energy Management Tracking System.	PM	September 2008	Complete	Gives very good traceability of electricity usage.
Initiative on weekend shutdown. Communicate via email.	PM	October 2008	Weekend audits by Energy Team Members.	Seeing a good reduction since start of initiative.
Achieve accreditation to IS393 energy management system	PM/SS	April 2009	Achieved	

**Environmental
Management
Ireland**



GlennConnor, Clonmel, Co. Tipperary

Environmental Noise Survey

Bulmers Ireland Limited,

Annerville,

Clonmel,

Co. Tipperary

**Undertaken by: Colette Flynn
Thomas Fuery**

Date: 18/11/08

Approved by: _____

Date:

1.0 Executive Summary

Bulmers Ltd requested Environmental Management Ireland Ltd. to undertake an environmental noise survey for its facility located at Annerville, Clonmel, Co. Tipperary as per the requirements of its IPPC Licence P0443-02.

This report comprises the final report on this environmental noise monitoring which was carried out by Collette Flynn and Thomas Fuery of Environmental Management Ireland Ltd. on Monday the 10th and Tuesday the 18th/Wednesday 19th of November 2008.

The site IPPC licence does not stipulate the exact position of noise monitoring locations rather it requires that noise levels at the nearest receptors do not exceed the recommended limit values. Five locations for environmental noise monitoring were chosen by Bulmers' environmental staff. Bulmers did not have permission from the property owners to carry out monitoring directly at the noise sensitive locations and so monitoring locations in the vicinity of the noise sensitive locations were chosen. Noise levels at the noise sensitive locations were predicted based on the noise levels recorded at the monitoring location.

Based on the results of noise monitoring carried out at noise sensitive locations in the vicinity of the Bulmers' site and at the site boundary it can be concluded that the site is in compliance with the noise limits set in the site IPPC licence.

2.0 Introduction

Bulmers Ltd requested Environmental Management Ireland Ltd to undertake an environmental noise survey for its facility located at Annerville, Clonmel, Co. Tipperary as per the requirements of its IPPC Licence P0443-02. The noise survey was undertaken on Monday 10th November for daytime monitoring. Due to inclement weather conditions, night-time monitoring was carried out at the later date of Tuesday 18th/Wednesday 19th November.

2.1 Scope

On agreement with the Bulmers' environmental staff, 5 survey locations were assessed. These consisted of four noise sensitive locations and one boundary location. This noise survey was required in order to determine compliance with the IPPC Licence conditions and taking into account other guidance noted and relevant legislation. .

- Conditions of IPPC Licence P0443-02
- EPA BAT Guidance Note on Best Available Techniques for the Brewing, Malting & Distilling Sector. Final Draft. Oct 2006
- International Standard ISO 1996:1082 Acoustics – Description and measurement of environmental Noise, Part 1. Basic quantities and procedures.
- EPA Guidance note for Noise in relation to Scheduled Activities 2nd Addition (2006)
- Environmental Noise Regulations, 2006 (S.I. no. 140 of 2006)

3.0 Methodology

3.1 Identification of the Noise Monitoring Locations

The site IPPC licence does not stipulate the exact locations of the noise monitoring locations. It however stipulates that the nearest noise sensitive locations do not exceed the recommended limit values. Noise monitoring was undertaken adjacent to those highlighted noise sensitive locations as indicated on the site map. No permission was given to Bulmers Ltd to undertake the noise survey within any of the noise sensitive locations premises.

The following table details the noise monitoring locations

Table 1: Noise Monitoring Locations

Monitoring Location Reference	Latitude	Longitude
NML01	52° 21' 30.7" N	07° 39' 04.4" W
NML02	52° 21' 51.6" N	07° 38' 59.8" W
NML03	52° 21' 38.4" N	07° 39' 10.6" W
NML04	52° 21' 53.7" N	07° 38' 41.9" W
NML05	52° 21' 40.8" N	07° 38' 39.5" W

3.2 Monitoring Plan

Daytime environmental noise monitoring was carried out by Ms. Colette Flynn and Mr. Thomas Fuery of Environmental Management Ireland Ltd. at each of the identified noise monitoring locations NML01 – NML05 on the 10/11/08. Nighttime environmental noise monitoring was carried out by same at the five identified noise monitoring locations on 18/11/08-19/11/08.

Measurement Equipment

Sound Level Meter:	Brüel and Kjaer 2250-L sound level meter Serial No. 2648949
Calibration Date:	23/07/2008
Microphone:	Brüel and Kjaer Type 4950 Serial No. 2640504
Calibration Date:	23/07/2008
Calibrator:	Brüel and Kjaer Type 4231 Serial No. 2643001
Calibration Date:	29/07/2008
Tripod:	Standard tripod

Measurement Procedure

1. All noise monitoring was attended to ensure that observations were recorded during the monitoring event
2. Noise monitoring was carried out at each of the monitoring locations for a period of thirty minutes.
3. The L_{Aeq} , L_{A10} and L_{A90} etc was recorded at each monitoring locations along with observations of site conditions and noise sources at the time of monitoring
4. At the time of monitoring weather conditions at each of the monitoring locations were noted.

Daytime noise monitoring was carried out between 09:50 and 15:30 hrs on Monday 10/11/2008 by Colette Flynn and Thomas Fuery.

Night time monitoring was carried out between 22.00 hrs, Tuesday 18/11/2008 and 02:15 hrs Wednesday 19/11/2008 by Colette Flynn and Thomas Fuery.

4.0 Results

4.1 Environmental Noise Survey Results

Tables 2 and 3 below contain details of the calibration records for the daytime and night time noise monitoring events respectively.

Table 2 Calibration Records for Daytime Monitoring

Monitoring Location Reference	Date	Description	Time	Reading dB
NML01	10/11/2008	Before monitoring	09:52	93.97
NML02	10/11/2008	Before monitoring	11:53	94.0
NML03	10/11/2008	Before monitoring	12:40	93.96
NML04	10/11/2008	Before monitoring	14:40	93.99
NML05	10/11/2008	Before monitoring	14:02	94.04
10/11/2008		After monitoring	15:43	94.00

Table 3 Calibration Records for Night Time Monitoring

Monitoring Location Reference	Date	Description	Time	Reading dB
NML01	18/11/08	Before monitoring	22:04	93.93
NML02	19/11/08	Before monitoring	00:40	93.99
NML03	19/11/08	Before monitoring	01:29	93.97
NML04	18/11/08	Before monitoring	22:54	93.99
NML05	18/11/08	Before monitoring	23:31	93.99
19/11/08		After monitoring	02:03	94.01

A summary of the results of the daytime environmental noise monitoring survey is contained in Table 4 and a summary of the results of the night time environmental noise monitoring is contained in Table 5. A full copy of the results is included in Appendix C attached to this report.

The broadband measurement results are presented as the equivalent noise level (L_{Aeq}), and the percentiles L_{A10} and L_{A90} .

The L_{Aeq} is the notional steady noise level, which would deliver the same amount of sound energy as the fluctuating level over a given period of time.

The L_{A10} is the noise level which is exceeded the quoted value for 10% of the instrument measuring time. This measurement is a good statistical parameter for expressing one off noise events, such as once off occurrences of vehicles passing nearby, birdsong etc.

The L_{A90} is the noise level exceeding for 90% of the instrumental measuring time. The L_{A90} is a good indicator of background ambient noise levels.

All results are presented as A-weighted decibel. (The A-weighting corresponds to an internal filter on the noise meter intended to match the hearing characteristics of the human ear).

No impulsive or tonal noises were observed at any of the monitoring locations during both daytime and night time monitoring events. Results of the 1/3 Octave band analysis are included in Appendix E attached to this report.

Table 4 Summary of Results of Daytime Noise Monitoring

Location	Meter Reference	Start Time	Noise Level (dB)			Limit (dB)	Comment
			L _{Aeq} 30 min	L _{A10} 30 min	L _{A90} 30 min		
NML01	081110 001	09:55	62.3	64.3	46.2	55	Monitoring at gateway of Ferryhouse School. Dominant Noise from traffic on main Waterford Rd. (N24) 150m away Noise from river 150m away Did not pause due to high volume of traffic in and out of school
NML02	081110 003	11:55	55.2	56.8	52.2	55	Monitoring at boundary adjacent to Medite and orchard. Dominant noise from Medite and apple loading machinery in orchard.

Location	Meter Reference	Start Time	Noise Level (dB)				Limit (dB)	Comment
			L _{Aeq} 30 min	L _{A10} 30 min	L _{A90} 30 min	L _{Aeq} 30 min		
NML03	081110 004	12:42	72.2	75.7	61.8	55	Monitoring at roadside (N24) at Bulmers boundary 30m opposite noise sensitive location, a dwelling. Traffic volume is too high to pause during monitoring.	
NML04	081110 006	14:42	53.9	52.8	49.4	55	Monitoring at back carpark at boundary of Annerville site, adjacent to noise sensitive location, housing estate. Trees rustling. Dogs Barking. Traffic on N24 can be heard. Site intercom announcements.	

Location	Meter Reference	Start Time	Noise Level (dB)				Limit (dB)	Comment
			L _{Aeq} 30 min	L _{A10} 30 min	L _{A90} 30 min	L _{Aeq} 30 min		
NM105	081110 005	14:04	60.0	61.3	53.2	55	Monitoring at boundary beside site water tank, adjacent to noise sensitive location, a dwelling Trees Rustling Intermittent traffic from carpark. Traffic from N24 can be heard Street cleaning truck passed at 9min 15 secs.	

Table 5 Summary of Results of Night Time Noise Monitoring

Location	Meter Reference	Start Time	Noise Level (dB)			Limit (dB)	Comment
			L _{Aeq} 30 min	L _{A10} 30 min	L _{A90} 30 min		
NML01	081118 002	22:06	47.3	49.6	41.2	45	Monitoring at gate of ferryhouse school Dominant noise from traffic on N24, 150m away. Paused for passing traffic Trees rustling. River can be heard, 150m away
NML02	081119 001	00:42	46.1	47.2	44.5	45	Monitoring at boundary adjacent to Medite and orchard. Dominant Noise from Medite, very apparent. Trucks entering/exiting site can be heard.

Location	Meter Reference	Start Time	Noise Level (dB)				Limit (dB)	Comment
			L _{Aeq} 30 min	L _{A10} 30 min	L _{A90} 30 min	L _{Aeq} 30 min		
NML03	081119 002	1:31	61.2	62.8	33	45	Monitoring at roadside (N24) at Bulmers boundary 30m opposite noise sensitive location, a dwelling, Birdsong, dog's Barking Paused for first 20mins of monitoring period = 10mins data LAeq at this time = 39.8dB 33 vehicles passed in this time Too high a volume of traffic to warrant pausing Did not pause for next 20mins of data. 38 vehicles passed in this time.	
NML04	081118 003	22:56	46.9	47.8	45.7	45	Monitoring at back carpark at boundary of Annerville site, adjacent to noise sensitive location, housing estate. Dominant noise from Medite, adjacent to site, very apparent.	

Location	Meter Reference	Start Time	Noise Level (dB)				Limit (dB)	Comment
			L _{Aeq} 30 min	L _{A10} 30 min	L _{A90} 30 min	L _{Aeq} 30 min		
NML05	081118 004	23:33	44.9	48.8	38.8	45	Monitoring at boundary beside site water tank, adjacent to noise sensitive location, a dwelling Noise from traffic on N24 Trees rustling	

5.0 Discussion

The Bulmers, Annerville site IPPC licence specifies the requirements for the site in relation to noise as follows;

“Schedule B: Emission Limits

B.4. Noise Emissions

<i>Daytime dB(A) LAeq(30 minutes)</i>	<i>Night-time dB(A) LAeq(30 minutes)</i>
<i>55^{Note 1}</i>	<i>45^{Note 1}</i>

Note 1: There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise sensitive location.”

“4.3 Noise

Noise from the installation shall not give rise to sound pressure levels (Leq, 30 minutes) measured at noise sensitive locations of the installation which exceed the limit value(s).”

As stated in Section 3 of this report, the site IPPC licence does not stipulate the exact position of noise monitoring locations, rather it requires that noise levels at the nearest receptors do not exceed the recommended limit values. It was proposed by Bulmers’ staff that environmental noise monitoring would be carried out at five locations in the vicinity of the plant and monitoring results at these five locations would then be used to estimate the noise levels at the identified noise sensitive locations. This approach was chosen as Bulmers did not have permission from the property owners at the nearest noise sensitive locations to carry out noise monitoring at their properties.

Daytime noise measurements recorded at each of the monitoring locations around the plant showed a LAeq of between 53.9dB and 72.2dB. Noise levels were found to be below the IPPC licence daytime limit at noise sensitive locations of 55dB at only one location, NML04.

Daytime noise levels recorded at monitoring locations NML01, NML02, NML03 and NML05 were all found to be above the daytime licence limit.

As noted in Table 4, the dominant noise source at three of these locations was traffic on the N24, the main Waterford/Limerick road.

The Bulmers Annerville site was in production during the daytime monitoring period.

Night-time noise measurements recorded at each of the monitoring locations around the plant showed a LAeq of between 44.9dB and 61.2dB. Noise levels were found to be below the IPPC licence limit at noise sensitive locations of 45dB at only one location, NML05.

Night-time noise levels recorded at monitoring locations NML01, NML02, NML03 and NML04 were all found to be above the night-time limit.

As noted in Table 5, the dominant noise source at locations NML01, NML03 and NML05 was traffic on the N24. The dominant noise source at locations NML02 and NML04 was the Medite site adjacent to the Annerville site.

There was no observable activity on site during night-time monitoring bar that of security and trucks arriving to park up on site for the night.

NML01, located at the gates of nearby Ferryhouse School is situated 150m from a roundabout on the N24. Traffic can be clearly heard at this location and accounts for the elevated background noise level as highlighted by the Daytime LA90 level of 46.2dB and night-time LA90 of 41.2dB.

During Daytime monitoring, vehicles passing the monitoring location were too numerous to warrant pausing for traffic, elevating noise levels at the monitoring location. This is highlighted by a Daytime LA10 of 64.3dB, which correlates closely with the Daytime LAeq of 62.3dB.

During night-time monitoring, data capture was paused for traffic passing the monitoring location. Traffic on the N24 was again the main source of noise with a high volume of traffic and this is again highlighted by the close correlation of a night-time LAeq of 47.3dB and a night-time LA10 of 49.6dB.

Due to the impact of traffic noise on both the daytime and night-time monitoring and the fact that noise emissions from the plant could still be heard at a low level, it is considered that the LAeq does not accurately represent noise emissions arising from the plant. Instead, in this instance, the LA90 parameter is considered to provide a more accurate representation of noise levels. This is the noise level exceeded for 90% of the time during a monitoring interval and is used to determine the background noise level at a location arising from a continuous noise source affecting that location, Bulmers, Annerville.

When the LA90 levels are considered, noise levels at NML01 fall within the limits for both daytime and night-time noise emissions, as stated in the sites IPPC licence.

NML02 is located at the site boundary where the orchards meet the Medite site boundary. No noise sensitive location was identified in the vicinity of this point. The dominant noise sources here was from the Medite site which appeared to be in full operation and apple loading machinery on site. Continuous noise and regular short blasts of sound akin to a steam pressure release valve from the Medite site were heard throughout the monitoring interval for both day and night-time monitoring. Intermittent noise from trucks entering and exiting the Bulmers yard could also be heard during day and night-time monitoring.

Daytime LAeq, LA90 and LA10 for NML02 as shown in table 4 closely correlate as do the Night-time LAeq, LA90 and LA10 as shown in table 5.

With this in mind coupled with the close proximity to the Medite site it can be considered that noise levels at this location cannot be solely attributed to arising from the Bulmers Annerville site.

NML03 is located at the site boundary with the N24, directly opposite a noise sensitive location, a dwelling.

The dominant noise source at this location was from passing traffic on the N24.

The volume of traffic during daytime monitoring was extremely high making pausing data capture for traffic unfeasible. This gave rise to an elevated LAeq level 72.2dB. This value closely correlates with a LA10 of 75.7dB, highlighting that traffic was the main source of elevated noise levels. Due to the extremely high volume of traffic there were constant elevated noise levels apparent, highlighted by the high LA90 of 61.8dB.

Due to the impact of traffic noise it is impossible to ascertain the true Daytime noise levels arising from the Bulmers Annerville site at this monitoring location. Considering the noise sensitive location is directly opposite from NML03, situated directly at the N24 roadside, even if Bulmers were to get permission from the property owner to monitor noise levels at the noise sensitive location the same inconclusive result would arise.

As highlighted in Table 5, data capture during night-time monitoring was paused for traffic for the first ten minutes of data. This correlated to 20mins real-time. In that 20mins 33 vehicles passed by the monitoring location. It was decided that pausing of data capture was unfeasible due to the elevated volume of traffic and so data capture was resumed for the remaining 20mins without pausing. During this second 20mins 38 cars passed the monitoring location.

After the initial 10 mins of data a LAeq of 39.8dB was noted.

The LAeq at the end of the monitoring period was 61.2dB which closely correlates with a LA10 of 62.8dB, highlighting the impact of traffic on the

monitoring location. In this case, similarly to NML01, the LA90 is considered to represent noise levels at this location more accurately than the LAeq.

When considering the LA90, a noise level of 33 dB is observed which is well within the night-time limit for noise levels at noise sensitive locations of 45dB as stated in the sites IPPC licence.

NML04 is located at the back carpark at the boundary of a noise sensitive location, a housing estate. The Medite site boundary is also adjacent to the monitoring location.

Again, as at NML02, the dominant noise source is the Medite site.

Daytime measurements recorded at this location gave a LAeq of 53.9dB, which is within the limits for daytime noise levels as per site IPPC licence.

Night-time measurements recorded at this location gave a LAeq of 46.9dB, which exceeds the limits for night-time noise levels as per site IPPC licence.

However, as with NML02, due to this monitoring locations proximity to the Medite site and the close correlation of the LAeq, LA90 and LA10 for both daytime and night-time monitoring, noise levels arising at this monitoring location cannot solely be attributed to the Bulmers Annerville site.

NML05 is located at the site boundary, 20m from site water storage tank, adjacent to noise sensitive location, a dwelling.

A daytime LAeq of 60dB and night-time LAeq of 44.9dB were recorded at this monitoring location.

Again, due to the impact of traffic noise on this monitoring location, the LA90 is considered to be a more accurate parameter when describing noise levels at this location. When taking the LA90 into consideration, daytime and night-time noise levels of 53.2dB and 38.8dB respectively were observed, both within limits as per site IPPC licence.

No tonal or impulsive noises were observed at any of the monitoring locations during both daytime and night-time monitoring events.

6.0 Conclusion

Due to the close proximity of the Bulmers Annerville site and the identified noise sensitive locations to the N24 at monitoring locations NML01, NML03 and NML05, it can be concluded that elevated noise levels at these points are attributed to traffic noise.

Noise levels at monitoring locations NML02 and NML04 cannot solely be attributed to arising from the Bulmers Annerville site.

Based on the results of the noise monitoring carried out at each of the noise monitoring locations around the site boundary and at noise sensitive locations in the vicinity of the Bulmers Annerville site, it can be concluded that the plant is in compliance with the noise limits as set in the site IPPC Licence.

Appendix A

Maps

Bulmers, Annerville Site Map



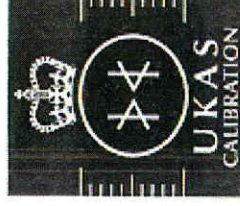
Appendix B

Calibration Certificates

CERTIFICATE OF CALIBRATION

Issued by: **Brüel & Kjær Sound & Vibration A/S.**

Date of Issue: **29 Jul. 2008** Certificate Number **C0805491**



Brüel & Kjær 

0174

Skodsborgvej 307, DK-2850 Nærum, Denmark
The calibration laboratory.
Telephone : +45 45 800 500 Fax : +45 45 801 40
E-Mail : ukservice@bksv.com

Page 1 of 2 pages

Approved signatory

Name: *Nils Johansen*

Signature: 

CALIBRATION OF CALIBRATOR TYPE 4231

Client: AIBP Cahir
Kilcommon
Cahir
Co Tipperary
Ireland

Calibrator Type 4231: S/No: 2643001
Client Inventory Number: Brüel & Kjær
Manufacturer: 22 Jul. 2008
Equipment Received on: 29 Jul. 2008
Calibration Date: OB. No. 6482478
Brüel & Kjær Reference No:

Measurement Method

The Calibration was performed to Laboratory Procedure TW1-104-DK.

Sound pressure level in the coupler of this calibrator was measured with a calibrated, laboratory grade condenser microphone specified in the certificate. In the case of 1/2 inch microphone, the 1/2 inch adaptor supplied with the calibrator was used. Choice of 1 or 1/2 inch microphone is specified in the customers order.

Sound pressure level measured was compared with sound pressure level generated in the coupler of a working standard pistonphone calibrated by the National Physical Laboratory using the same microphone and at the same ambient conditions.

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognised national standards, and to units of measurement retained at the National Physical Laboratory or other recognised national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Rev. 3 DK; 06.05.07

Appendix C

Broadband Monitoring Results

Summary of Results

Meter Log Number	Start time	Elapsed time	Overload [%]	LAeq [dB]	LAF90 [dB]	LAF10 [dB]
081110 001	10/11/2008 09:54	00:30:00	0	62.3	46.2	64.3
081110 003	10/11/2008 11:55	00:30:00	0	55.2	52.2	56.8
081110 004	10/11/2008 12:42	00:30:00	0	72.2	61.8	75.7
081110 005	10/11/2008 14:04	00:30:00	0	60	53.2	61.3
081110 006	10/11/2008 14:42	00:30:00	0	53.9	49.4	52.8
081118 002	18/11/2008 22:06	00:30:00	0	47.3	41.2	49.6
081118 003	18/11/2008 22:56	00:30:00	0	46.9	45.7	47.8
081118 004	18/11/2008 23:33	00:30:00	0	44.9	38.8	48.8
081119 001	19/11/2008 00:42	00:30:00	0	46.1	44.5	47.2
081119 002	19/11/2008 01:31	00:30:00	0	61.2	33	62.8

Appendix D

Weather Conditions

Weather; Daytime Monitoring

	General Conditions	Temp (°C)	Wind Speed (m/s)	Relative Humidity (%)
NML01	Clear	8	0.4	73.3
NML02	Clear	9.3	1.4	72.2
NML03	Clear	9.4	1.3	66.2
NML04	Clear	9.9	0.8	67.0
NML05	Clear	10.2	2.6	61.2

Night-time; Daytime Monitoring

	General Conditions	Temp (°C)	Wind Speed (m/s)	Relative Humidity (%)
NML01	Clear	11.4	0.7	93.0
NML02	Overcast	11.9	2.7	94.3
NML03	Overcast	11.1	1.7	97.5
NML04	Overcast	10.8	0.8	94.5
NML05	Overcast	11.6	1.3	94.8

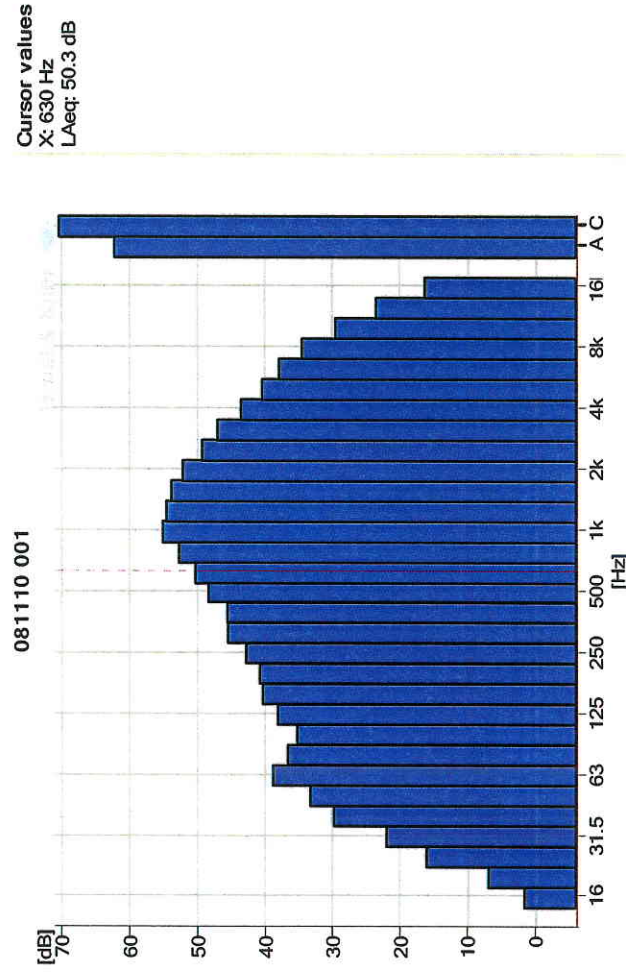
Appendix E

1/3 Octave Monitoring Results

Log Number	Daytime	1
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081110 001

Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq
12.5Hz	-6.17	100Hz	35.22	800Hz	52.7	6.3kHz	37.89
16Hz	1.74	125Hz	38.08	1kHz	55.02	8kHz	34.52
20Hz	7.06	160Hz	40.31	1.25kHz	54.52	10kHz	29.44
25Hz	16.01	200Hz	40.71	1.6kHz	53.8	12.5kHz	23.41
31.5Hz	21.89	250Hz	42.73	2kHz	52.1	16kHz	16.28
40Hz	29.68	315Hz	45.44	2.5kHz	49.29	A	62.25
50Hz	33.27	400Hz	45.53	3.15kHz	47.03	C	70.35
63Hz	38.76	500Hz	48.32	4kHz	43.51		
80Hz	36.6	630Hz	50.26	5kHz	40.38		



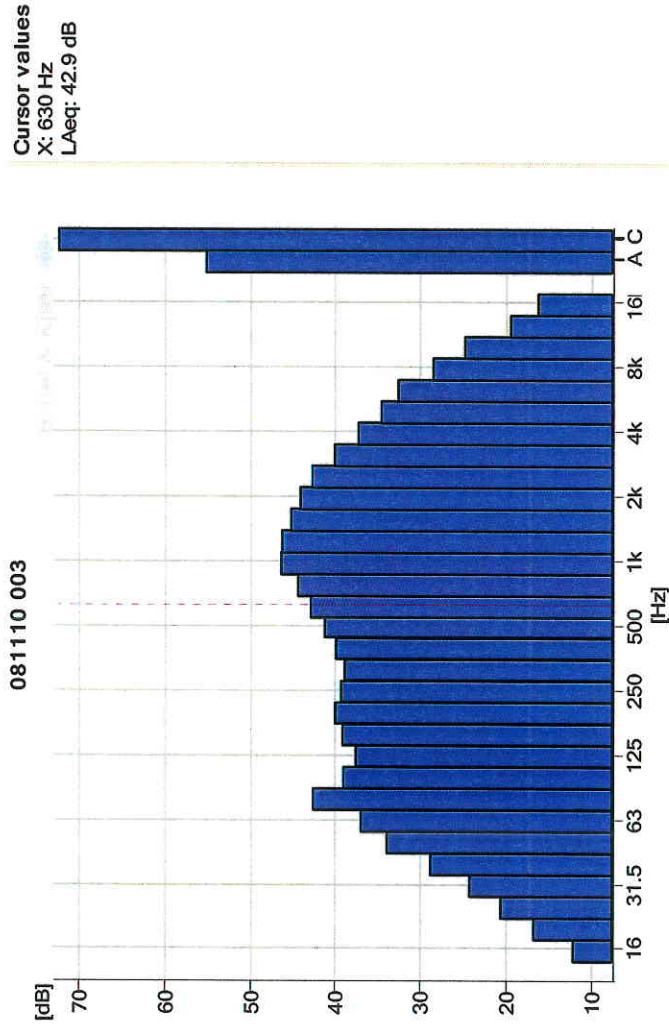
Log Number

Daytime

2

081110 003

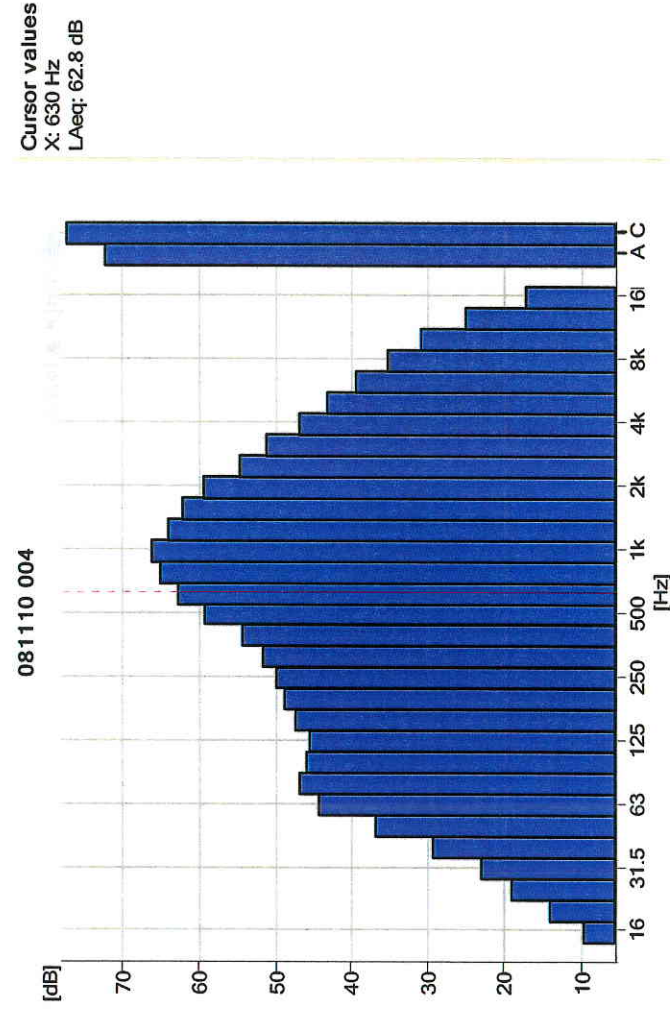
Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq
12.5Hz	7.43	100Hz	39	800Hz	44.39	6.3kHz	32.51
16Hz	12.21	125Hz	37.54	1kHz	46.38	8kHz	28.42
20Hz	16.83	160Hz	39.14	1.25kHz	46.28	10kHz	24.75
25Hz	20.66	200Hz	39.96	1.6kHz	45.24	12.5kHz	19.47
31.5Hz	24.26	250Hz	39.33	2kHz	44.1	16kHz	16.29
40Hz	28.77	315Hz	38.86	2.5kHz	42.67	A	55.15
50Hz	33.87	400Hz	39.85	3.15kHz	40	C	72.33
63Hz	36.93	500Hz	41.21	4kHz	37.26		
80Hz	42.58	630Hz	42.87	5kHz	34.5		



Daytime 3

Log Number
 081110 004

Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq
12.5Hz	5.49	100Hz	45.98	800Hz	65.05	6.3kHz	39.39		
16Hz	9.73	125Hz	45.56	1kHz	66.11	8kHz	35.19		
20Hz	14.07	160Hz	47.39	1.25kHz	64.01	10kHz	30.91		
25Hz	19.01	200Hz	48.88	1.6kHz	62.15	12.5kHz	25		
31.5Hz	22.95	250Hz	49.97	2kHz	59.44	16kHz	17.15		
40Hz	29.33	315Hz	51.72	2.5kHz	54.75	A	72.15		
50Hz	36.8	400Hz	54.43	3.15kHz	51.26	C	77.2		
63Hz	44.33	500Hz	59.31	4kHz	46.88				
80Hz	46.85	630Hz	62.75	5kHz	43.2				



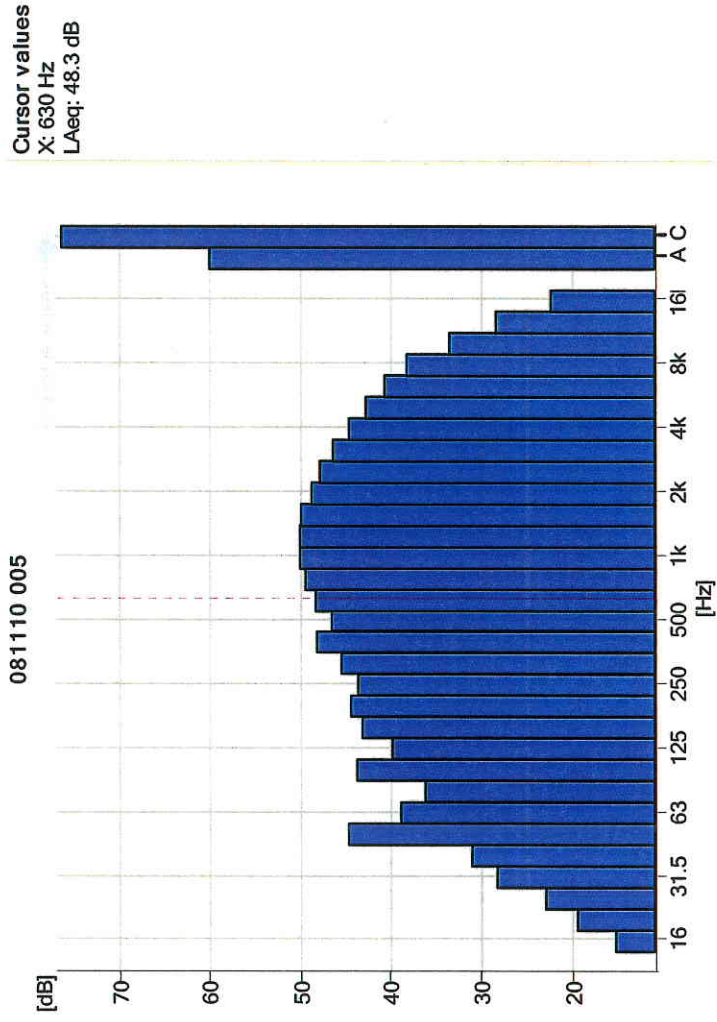
Log Number

Daytime

5

081110 005

Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq
12.5Hz	10.91	100Hz	43.78	800Hz	49.49	6.3kHz	40.7
16Hz	15.29	125Hz	39.87	1kHz	50.08	8kHz	38.26
20Hz	19.44	160Hz	43.19	1.25kHz	50.08	10kHz	33.55
25Hz	22.89	200Hz	44.46	1.6kHz	49.95	12.5kHz	28.38
31.5Hz	28.25	250Hz	43.67	2kHz	48.77	16kHz	22.36
40Hz	31.04	315Hz	45.5	2.5kHz	47.84	A	59.99
50Hz	44.71	400Hz	48.15	3.15kHz	46.42	C	76.39
63Hz	38.9	500Hz	46.57	4kHz	44.66		
80Hz	36.26	630Hz	48.3	5kHz	42.78		



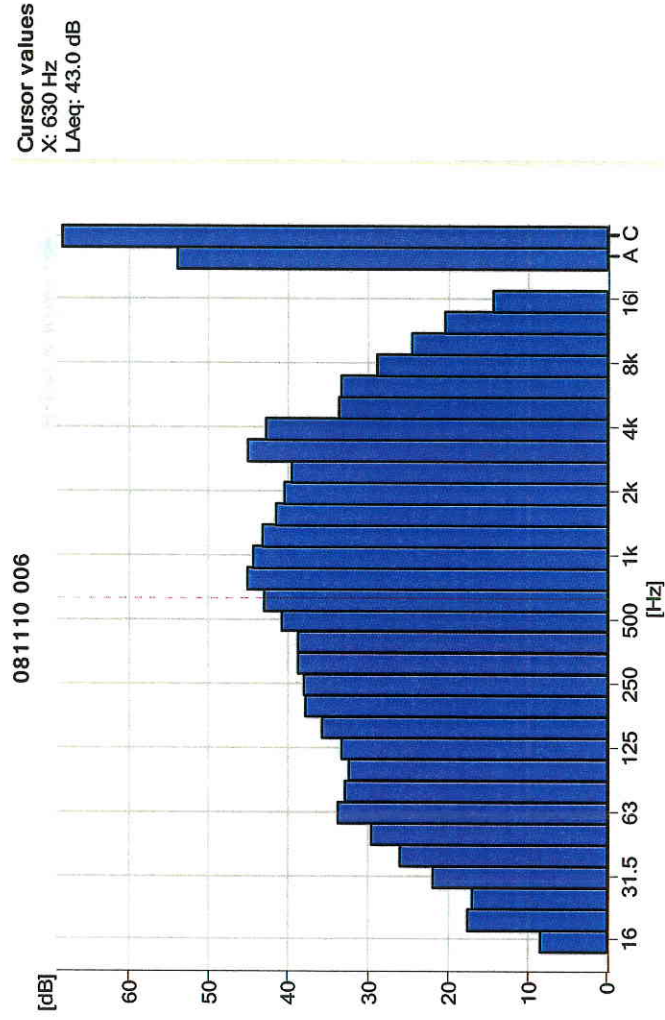
Log Number

Daytime

4

081110 006

Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq
12.5Hz	-0.13	100Hz	32.39	800Hz	45.06	6.3kHz	33.38
16Hz	8.47	125Hz	33.27	1kHz	44.31	8kHz	28.9
20Hz	17.62	160Hz	35.67	1.25kHz	43.17	10kHz	24.53
25Hz	17.07	200Hz	37.81	1.6kHz	41.49	12.5kHz	20.51
31.5Hz	21.97	250Hz	38.01	2kHz	40.44	16kHz	14.41
40Hz	26	315Hz	38.73	2.5kHz	39.53	A	53.87
50Hz	29.57	400Hz	38.71	3.15kHz	45	C	68.37
63Hz	33.74	500Hz	40.77	4kHz	42.71		
80Hz	32.85	630Hz	42.96	5kHz	33.66		



Log Number

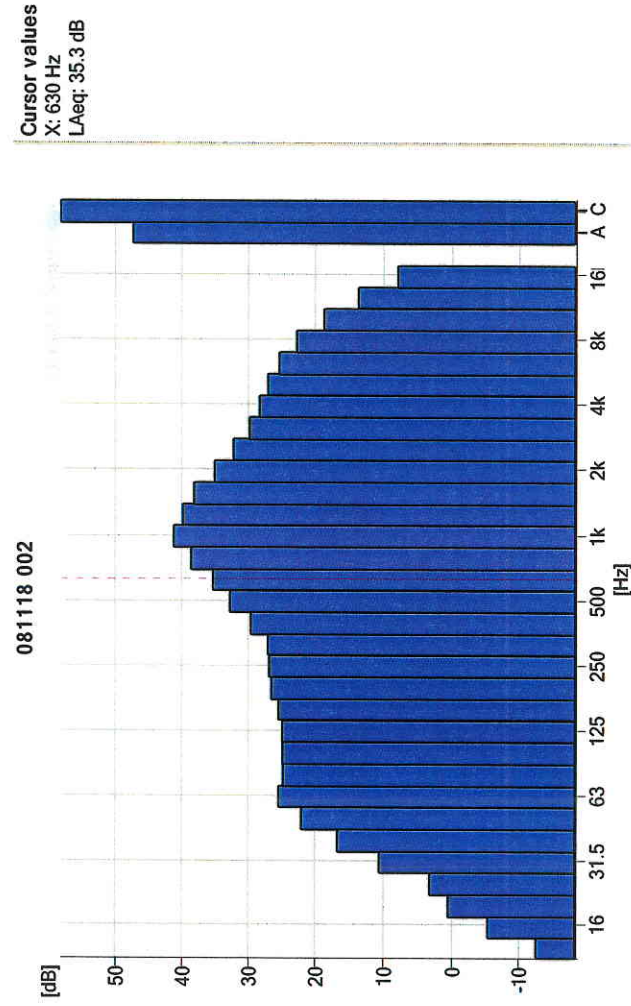
Night

1

time

081118 002

Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq
12.5Hz	-12.54	100Hz	24.8	800Hz	38.54	6.3kHz	25.3		
16Hz	-5.34	125Hz	24.87	1kHz	41.13	8kHz	22.64		
20Hz	0.56	160Hz	25.41	1.25kHz	39.84	10kHz	18.63		
25Hz	3.31	200Hz	26.52	1.6kHz	38.12	12.5kHz	13.65		
31.5Hz	10.6	250Hz	26.86	2kHz	35.04	16kHz	8.02		
40Hz	16.71	315Hz	27	2.5kHz	32.18	A	47.26		
50Hz	22.02	400Hz	29.59	3.15kHz	29.76	C	57.99		
63Hz	25.41	500Hz	32.71	4kHz	28.3				
80Hz	24.75	630Hz	35.27	5kHz	27.01				



Log Number

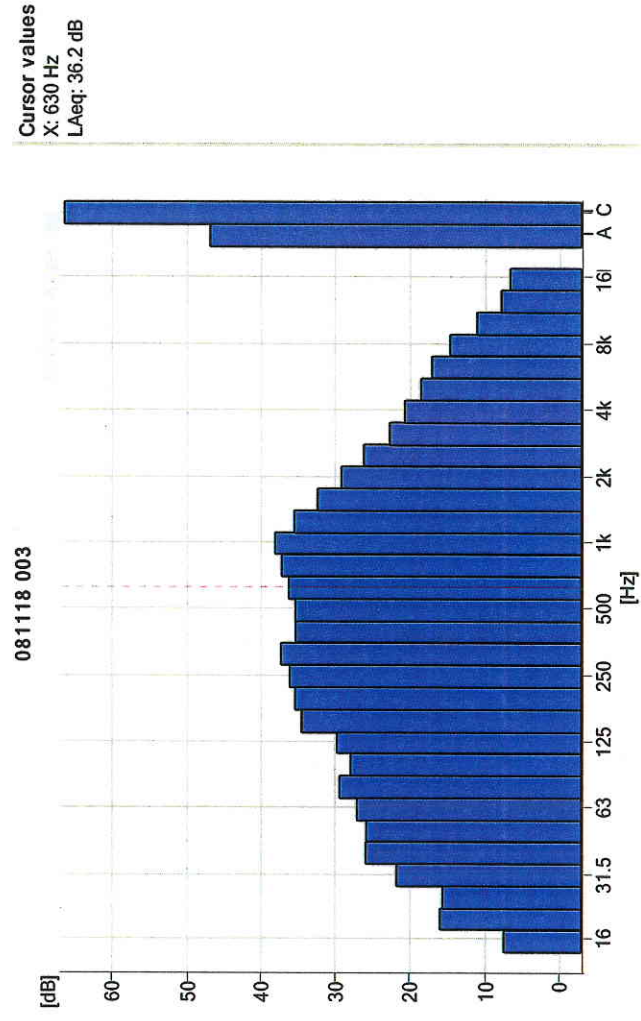
Night

4

time

081118 003

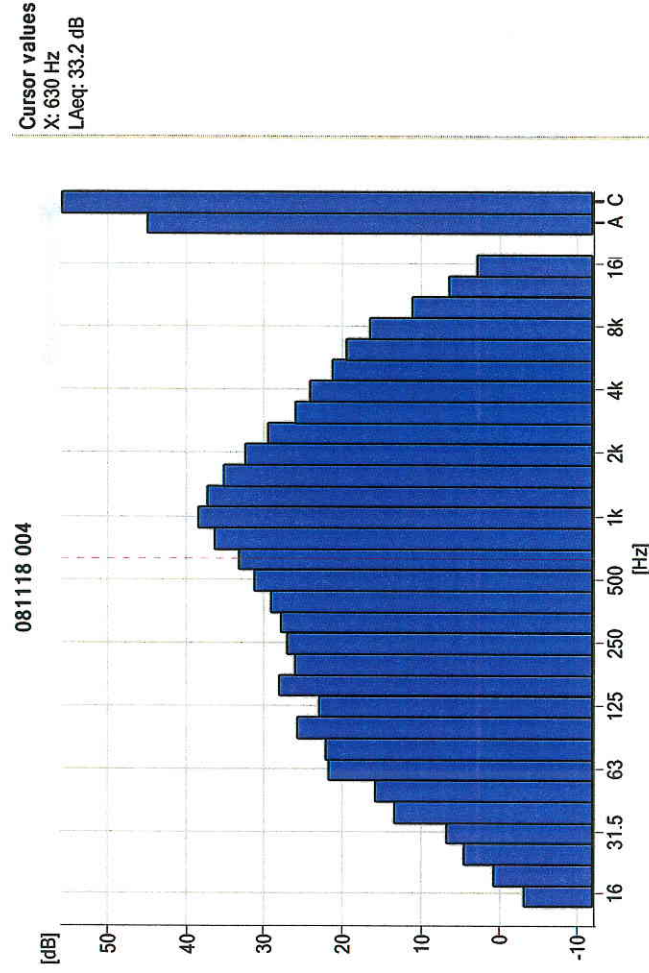
Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq
12.5Hz	-3.11	100Hz	27.86	800Hz	37.21	6.3kHz	17.1				
16Hz	7.54	125Hz	29.73	1kHz	38.12	8kHz	14.72				
20Hz	16.02	160Hz	34.48	1.25kHz	35.46	10kHz	11.1				
25Hz	15.7	200Hz	35.33	1.6kHz	32.35	12.5kHz	7.89				
31.5Hz	21.73	250Hz	36.12	2kHz	29.13	16kHz	6.68				
40Hz	25.87	315Hz	37.31	2.5kHz	26.12	A	46.92				
50Hz	25.77	400Hz	35.25	3.15kHz	22.62	C	66.34				
63Hz	27.03	500Hz	35.28	4kHz	20.72						
80Hz	29.36	630Hz	36.24	5kHz	18.57						



Night time 5

Log Number
 081118 004

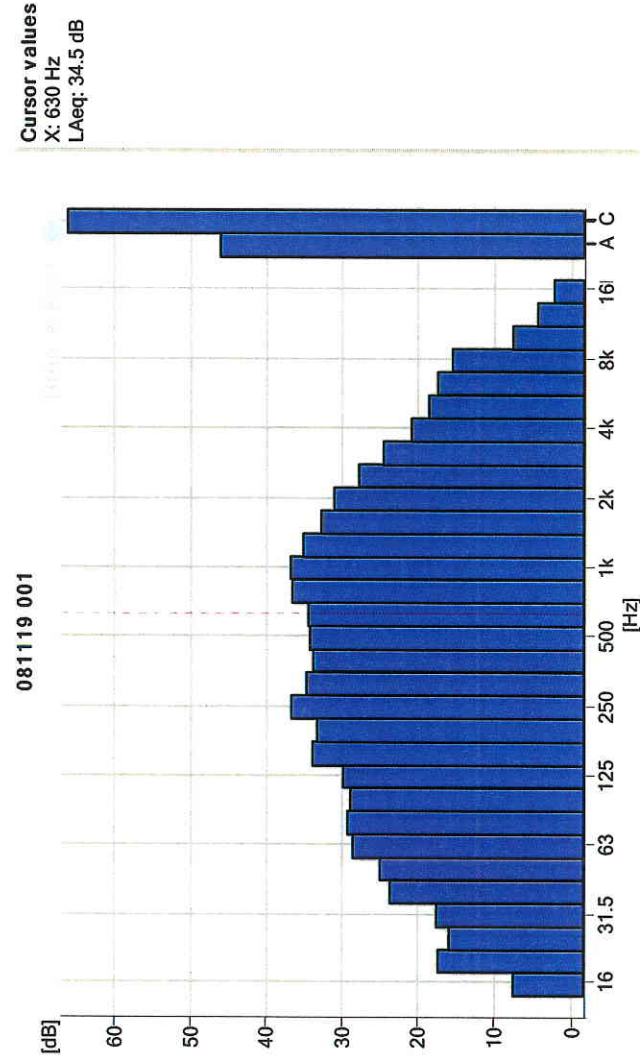
Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq
12.5Hz	-12.15	100Hz	25.73	800Hz	36.37	6.3kHz	19.44		
16Hz	-3.06	125Hz	22.93	1kHz	38.45	8kHz	16.49		
20Hz	0.76	160Hz	28.04	1.25kHz	37.31	10kHz	11.06		
25Hz	4.53	200Hz	26.01	1.6kHz	35.21	12.5kHz	6.45		
31.5Hz	6.79	250Hz	27.03	2kHz	32.41	16kHz	2.88		
40Hz	13.32	315Hz	27.81	2.5kHz	29.48	A	44.9		
50Hz	15.78	400Hz	29.13	3.15kHz	25.93	C	55.79		
63Hz	21.71	500Hz	31.22	4kHz	24.1				
80Hz	22.09	630Hz	33.23	5kHz	21.2				



Night
 time 2

Log Number
 081119 001

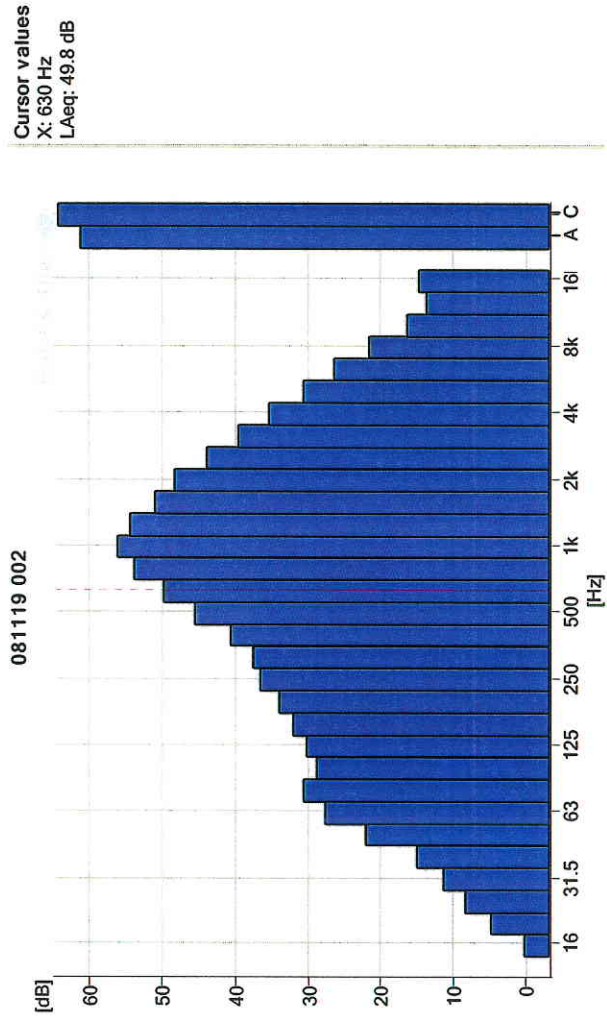
Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq
12.5Hz	-1.78	100Hz	28.84	800Hz	36.61	6.3kHz	17.37
16Hz	7.58	125Hz	29.8	1kHz	36.81	8kHz	15.41
20Hz	17.33	160Hz	33.88	1.25kHz	35.12	10kHz	7.61
25Hz	15.88	200Hz	33.26	1.6kHz	32.73	12.5kHz	4.43
31.5Hz	17.55	250Hz	36.69	2kHz	30.98	16kHz	2.28
40Hz	23.68	315Hz	34.7	2.5kHz	27.7	A	46.11
50Hz	24.99	400Hz	33.81	3.15kHz	24.49	C	66.07
63Hz	28.53	500Hz	34.23	4kHz	20.82		
80Hz	29.22	630Hz	34.45	5kHz	18.49		



Night time 3

Log Number
 081119 002

Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq	Frequency	LAeq
12.5Hz	-3.31	100Hz	28.77	800Hz	53.75	6.3kHz	26.33		
16Hz	0.24	125Hz	30.17	1kHz	56.07	8kHz	21.61		
20Hz	4.74	160Hz	32.02	1.25kHz	54.34	10kHz	16.28		
25Hz	8.25	200Hz	33.93	1.6kHz	50.94	12.5kHz	13.6		
31.5Hz	11.25	250Hz	36.52	2kHz	48.26	16kHz	14.65		
40Hz	14.91	315Hz	37.57	2.5kHz	43.88	A	61.15		
50Hz	22.04	400Hz	40.65	3.15kHz	39.56	C	64.22		
63Hz	27.55	500Hz	45.5	4kHz	35.35				
80Hz	30.62	630Hz	49.76	5kHz	30.59				



Client ID :	PATRICK MORRISSEY BULMERS IRELAND LTD ANNERVILLE CLONMEL CO TIPPERARY IRELAND	Job No. Report No : Date of Receipt : Delivery Mode : Date testing initiated : Date of Report : Sample Cond. On Receipt: Client Ref:	08J05883 34/54814 30/10/2008 REFRIDGERATED VAN 30/10/2008 22/12/2008 SATISFACTORY PW3
No of Samples :	1	Page :	1 of 5
Sample Type :	Water or wastewater		

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Table B
Chemical Parameters

Test	Result	Parametric Value	Unit	Method
Acrylamide	<0.02	0.1	µg/l	SUBCONTRACTED
Antimony (Sb)	<0.12	5	µg/l	SUBCONTRACTED
Arsenic (As)	<0.37	10	µg/l	SUBCONTRACTED
Benzene	<0.3	1	µg/l	SUBCONTRACTED
Boron (B)	<0.017	1	mg/l	SUBCONTRACTED
Bromate as BrO ₃	<0.6	25	µg/l	SUBCONTRACTED
Cadmium (Cd)	<0.06	5	µg/l	APHA 1998 3111:B
Chromium (Cr)	<0.7	50	µg/l	SUBCONTRACTED
Copper (Cu)	<0.0027	2	mg/l	APHA 1998 3111:B
Cyanide (CN)	<0.7	50	µg/l	SUBCONTRACTED
1,2-Dichloroethane	<0.3	3	µg/l	SUBCONTRACTED
Epichlorohydrin	<0.1	0.1	µg/l	SUBCONTRACTED
Fluoride (F)	0.2	0.8*	mg/l	ETC981/APHA 1998S 4110:B
Lead (Pb)	<0.5	25	µg/l	SUBCONTRACTED
Mercury (Hg)	<0.012	1	µg/l	SUBCONTRACTED
Nickel (Ni)	<0.9	20	µg/l	APHA 1998 3111:B
Nitrate Nitrogen (NO ₃ as NO ₃)	8	50	mg/l	ET0443/APHA98 4500NO3:I
Nitrite Nitrogen (NO ₂ as NO ₂)	<0.03	0.5**	mg/l	ET0432/APHA98 4500NO3:I
Nitrate/50 + Nitrite/3	<1	<1	mg/l	
Pesticides - Total Appendix I	<0.020	0.5	µg/l	
PAH Appendix II	<0.002	0.1	µg/l	SUBCONTRACTED
Selenium (Se)	<0.22	10	µg/l	SUBCONTRACTED
Tetrachloroethene and Trichloroethene (sum)	<0.6	10	µg/l	SUBCONTRACTED
Trihalomethanes Appendix III	<0.3	150	µg/l	SUBCONTRACTED
Vinyl Chloride	<0.3	0.5	µg/l	SUBCONTRACTED

* P. Value for supplies with naturally occurring fluoride = 1.5 mg/l

** Nitrite Limit for Waterworks is <0.1mg/l

Client ID : PATRICK MORRISSEY
BULMERS IRELAND LTD
ANNERVILLE
CLONMEL
CO TIPPERARY
IRELAND

Job No. 08J05883
Report No : 34/54814
Date of Receipt : 30/10/2008
Delivery Mode : REFRIDGERATED VAN
Date testing initiated : 30/10/2008
Date of Report : 22/12/2008
Sample Cond. On Receipt: SATISFACTORY
Client Ref: PW3

No of Samples : 1
Sample Type : Water or wastewater

Page : 2 of 5

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Table c
Indicator Parameters

Test	Result	ParametricValue	Unit	Method
Aluminium	<11	200	µg/l	APHA 1998 3111:D
Ammonia Nitrogen as NH4	<0.06	0.3	mg/l	ET0383/MEWAM1981
Chloride (Cl)	17	250	mg/l	ETC981/APHA 1998S 4110:B
Colour (filtered)	<2	Acceptable	Hazen	ET2992/MEWAM 1981 C&T
Conductivity @ 20°C	594	2500	µS/cm	ET0561/APHA1998:2510:B
Hydrogen Ion Concentration (pH)	7.4	6.5 ≤ pH ≤ 9.5	pH units	ET1241/APHA1998:4500H:B
Iron (Fe)	13	200	µg/l	APHA 1998 3111:B
Manganese (Mn)	53	50	µg/l	APHA 1998 3111:B
Odour	Acceptable	Acceptable		APHA 1998 2170
Sulphate (SO4)	22	250	mg/l	ETC981/APHA 1998S 4110:B
Sodium	15	200	mg/l	APHA 1998 3111:B
Taste	Acceptable	Acceptable		APHA 1998 2150
TOC as NPOC	0.63	*	mg/l	APHA1998 5310:B
Turbidity	0.1	Acceptable	NTU	APHA 1998 2130:B
Radioactivity :				
Gross alpha	0.069	0.1	Bq/l	SUBCONTRACTED
Gross beta	0.069	1	Bq/l	SUBCONTRACTED
Tritium	<2.5	100	Bq/l	SUBCONTRACTED
Total Indicative Dose	<0.1	0.1	mSv/year	SUBCONTRACTED

* No abnormal change

Client ID : PATRICK MORRISSEY
BULMERS IRELAND LTD
ANNERVILLE
CLONMEL
CO TIPPERARY
IRELAND

Job No. 08J05883
Report No : 34/54814
Date of Receipt : 30/10/2008
Delivery Mode : REFRIDGERATED VAN
Date testing initiated : 30/10/2008
Date of Report : 22/12/2008
Sample Cond. On Receipt: SATISFACTORY
Client Ref: PW3

No of Samples : 1
Sample Type : Water or wastewater

Page : 3 of 5

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Appendix I Pesticides

Organohalide Pesticides

Test	Result	ParametricValue	Unit	Method
Aldrin	<0.003	0.03	µg/l	SUBCONTRACTED
Chlordane-α	<0.002	0.1	µg/l	SUBCONTRACTED
Chlorothalonil	<0.003	0.1	µg/l	SUBCONTRACTED
Cyfluthrin	<0.003	0.1	µg/l	SUBCONTRACTED
Cypermethrin	<0.003	0.1	µg/l	SUBCONTRACTED
Deltamethrin	<0.004	0.1	µg/l	SUBCONTRACTED
Dichlobenil	<0.001	0.1	µg/l	SUBCONTRACTED
Dieldrin	<0.002	0.03	µg/l	SUBCONTRACTED
Endosulphan-α	<0.003	0.1	µg/l	SUBCONTRACTED
Endosulphan-β	<0.003	0.1	µg/l	SUBCONTRACTED
Endrin	<0.003	0.03	µg/l	SUBCONTRACTED
Fenvalerate	<0.003	0.1	µg/l	SUBCONTRACTED
HCH-α	<0.002	0.1	µg/l	SUBCONTRACTED
HCH-β	<0.002	0.1	µg/l	SUBCONTRACTED
HCH-d	<0.002	0.1	µg/l	SUBCONTRACTED
HCH-g (Lindane)	<0.002	0.1	µg/l	SUBCONTRACTED
Heptachlor	<0.002	0.1	µg/l	SUBCONTRACTED
Heptachlor Epoxide	<0.002	0.1	µg/l	SUBCONTRACTED
Hexachlorobenzene	<0.002	0.1	µg/l	SUBCONTRACTED
Isodrin	<0.003	0.03	µg/l	SUBCONTRACTED
Methoxychlor	<0.003	0.1	µg/l	SUBCONTRACTED
op-DDE	<0.002	0.1	µg/l	SUBCONTRACTED
op-DDT	<0.002	0.1	µg/l	SUBCONTRACTED
op-TDE	<0.002	0.1	µg/l	SUBCONTRACTED
Permethrin, cis	<0.003	0.1	µg/l	SUBCONTRACTED
Permethrin, trans	<0.004	0.1	µg/l	SUBCONTRACTED
pp-DDE	<0.002	0.1	µg/l	SUBCONTRACTED
pp-DDT	<0.002	0.1	µg/l	SUBCONTRACTED
pp-TDE	<0.003	0.1	µg/l	SUBCONTRACTED
Total Organohalide Pesticides	<0.004		µg/l	SUBCONTRACTED

Client ID :	PATRICK MORRISSEY BULMERS IRELAND LTD ANNERVILLE CLONMEL CO TIPPERARY IRELAND	Job No. Report No : Date of Receipt : Delivery Mode : Date testing initiated : Date of Report : Sample Cond. On Receipt: Client Ref:	08J05883 34/54814 30/10/2008 REFRIDGERATED VAN 30/10/2008 22/12/2008 SATISFACTORY PW3
No of Samples :	1		
Sample Type :	Water or wastewater		
		Page :	4 of 5

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Appendix I Pesticides

Organophosphorous Pesticides

Test	Result	ParametricValue	Unit	Method
Azinphos-methyl	<0.004	0.1	µg/l	SUBCONTRACTED
Carbophenothion	<0.012	0.1	µg/l	SUBCONTRACTED
Chlorfenvinphos	<0.005	0.1	µg/l	SUBCONTRACTED
Demeton-s-methyl	<0.006	0.1	µg/l	SUBCONTRACTED
Diazinon	<0.006	0.1	µg/l	SUBCONTRACTED
Dichlorvos	<0.008	0.1	µg/l	SUBCONTRACTED
Dimethoate	<0.005	0.1	µg/l	SUBCONTRACTED
Fenitrothion	<0.004	0.1	µg/l	SUBCONTRACTED
Malathion	<0.004	0.1	µg/l	SUBCONTRACTED
Mevinphos	<0.004	0.1	µg/l	SUBCONTRACTED
Parathion ethyl	<0.006	0.1	µg/l	SUBCONTRACTED
Phorate	<0.009	0.1	µg/l	SUBCONTRACTED
Phosalone	<0.007	0.1	µg/l	SUBCONTRACTED
Pirimiphos methyl	<0.009	0.1	µg/l	SUBCONTRACTED
Propetamphos	<0.007	0.1	µg/l	SUBCONTRACTED
Triazophos	<0.003	0.1	µg/l	SUBCONTRACTED

Total Organo-P Pesticides	<0.012	µg/l	SUBCONTRACTED
---------------------------	--------	------	---------------

Client ID : PATRICK MORRISSEY
BULMERS IRELAND LTD
ANNERVILLE
CLONMEL
CO TIPPERARY
IRELAND

Job No. : 08J05883
Report No : 34/54814
Date of Receipt : 30/10/2008
Delivery Mode : REFRIDGERATED VAN
Date testing initiated : 30/10/2008
Date of Report : 22/12/2008
Sample Cond. On Receipt: SATISFACTORY
Client Ref: PW3

No of Samples : 1
Sample Type : Water or wastewater

Page : 5 of 5

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.


Appendix II Polycyclic Aromatic Hydrocarbons

Test	Result	Unit	Method
Benzo(b)fluoranthene	<0.001	µg/l	SUBCONTRACTED
Benzo -a-pyrene	<0.001	µg/l	SUBCONTRACTED
Benzo(g,h,i)perylene	<0.001	µg/l	SUBCONTRACTED
Benzo(k)fluoranthene	<0.001	µg/l	SUBCONTRACTED
Indeno(123-cd)pyrene	<0.002	µg/l	SUBCONTRACTED
Total PAH	<0.002	µg/l	SUBCONTRACTED

Appendix III Trihalomethanes (THM)

Test	Result	Unit	Method
Bromodichloromethane	<0.3	µg/l	SUBCONTRACTED
Bromoform	<0.3	µg/l	SUBCONTRACTED
Chloroform	<0.3	µg/l	SUBCONTRACTED
Dibromochloromethane	<0.3	µg/l	SUBCONTRACTED
Total THM	<0.3	µg/l	SUBCONTRACTED

Authorised by: _____


Teresa A. Twomey
Environmental Div Manager

Client ID : PATRICK MORRISSEY
BULMERS IRELAND LTD
ANNERVILLE
CLONMEL
CO TIPPERARY
IRELAND

Job No. 08J05883
Report No : 34/54812
Date of Receipt : 30/10/2008
Delivery Mode : REFRIDGERATED VAN
Date testing initiated : 30/10/2008
Date of Report : 22/12/2008
Sample Cond. On Receipt: SATISFACTORY
Client Ref: RW4

No of Samples : 1
Sample Type : Water or wastewater

Page : 1 of 5

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Table B
Chemical Parameters

Test	Result	Parametric Value	Unit	Method
Acrylamide	<0.02	0.1	µg/l	SUBCONTRACTED
Antimony (Sb)	<0.12	5	µg/l	SUBCONTRACTED
Arsenic (As)	<0.37	10	µg/l	SUBCONTRACTED
Benzene	<0.3	1	µg/l	SUBCONTRACTED
Boron (B)	<0.017	1	mg/l	SUBCONTRACTED
Bromate as BrO3	<0.6	25	µg/l	SUBCONTRACTED
Cadmium (Cd)	<0.06	5	µg/l	APHA 1998 3111:B
Chromium (Cr)	<0.7	50	µg/l	SUBCONTRACTED
Copper (Cu)	<0.0027	2	mg/l	APHA 1998 3111:B
Cyanide (CN)	<0.7	50	µg/l	SUBCONTRACTED
1,2-Dichloroethane	<0.3	3	µg/l	SUBCONTRACTED
Epichlorohydrin	<0.1	0.1	µg/l	SUBCONTRACTED
Fluoride (F)	0.2	0.8*	mg/l	ETC981/APHA 1998S 4110:B
Lead (Pb)	<0.5	25	µg/l	SUBCONTRACTED
Mercury (Hg)	<0.012	1	µg/l	SUBCONTRACTED
Nickel (Ni)	6.2	20	µg/l	APHA 1998 3111:B
Nitrate Nitrogen (NO3 as NO3)	15.5	50	mg/l	ET0443/APHA98 4500NO3:I
Nitrite Nitrogen (NO2 as NO2)	<0.03	0.5**	mg/l	ET0432/APHA98 4500NO3:I
Nitrate/50 + Nitrite/3	<1	<1	mg/l	
Pesticides - Total Appendix I	<0.020	0.5	µg/l	
PAH Appendix II	<0.002	0.1	µg/l	SUBCONTRACTED
Selenium (Se)	0.91	10	µg/l	SUBCONTRACTED
Tetrachloroethene and Trichloroethene (sum)	<0.6	10	µg/l	SUBCONTRACTED
Trihalomethanes Appendix III	<0.3	150	µg/l	SUBCONTRACTED
Vinyl Chloride	<0.3	0.5	µg/l	SUBCONTRACTED

* P. Value for supplies with naturally occurring fluoride = 1.5 mg/l

** Nitrite Limit for Waterworks is <0.1mg/l

Client ID : PATRICK MORRISSEY
BULMERS IRELAND LTD
ANNERVILLE
CLONMEL
CO TIPPERARY
IRELAND

Job No. 08J05883
Report No : 34/54812
Date of Receipt : 30/10/2008
Delivery Mode : REFRIDGERATED VAN
Date testing initiated : 30/10/2008
Date of Report : 22/12/2008
Sample Cond. On Receipt: SATISFACTORY
Client Ref: RW4

No of Samples : 1
Sample Type : Water or wastewater

Page : 2 of 5

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Table C
Indicator Parameters

Test	Result	Parametric Value	Unit	Method
Aluminium	<11	200	µg/l	APHA 1998 3111:D
Ammonia Nitrogen as NH4	<0.06	0.3	mg/l	ET0383/MEWAM1981
Chloride (Cl)	19	250	mg/l	ETC981/APHA 1998S 4110:B
Colour (filtered)	<2	Acceptable	Hazen	ET2992/MEWAM 1981 C&T
Conductivity @ 20°C	622	2500	µS/cm	ET0561/APHA1998:2510:B
Hydrogen Ion Concentration (pH)	7.4	6.5 ≤ pH ≤ 9.5	pH units	ET1241/APHA1998:4500H:B
Iron (Fe)	<7.0	200	µg/l	APHA 1998 3111:B
Manganese (Mn)	<1.5	50	µg/l	APHA 1998 3111:B
Odour	Acceptable	Acceptable		APHA 1998 2170
Sulphate (SO4)	15	250	mg/l	ETC981/APHA 1998S 4110:B
Sodium	10	200	mg/l	APHA 1998 3111:B
Taste	Acceptable	Acceptable		APHA 1998 2150
TOC as NPOC	0.38	*	mg/l	APHA1998 5310:B
Turbidity	0.1	Acceptable	NTU	APHA 1998 2130:B
Radioactivity :				
Gross alpha	0.08	0.1	Bq/l	SUBCONTRACTED
Gross beta	0.037	1	Bq/l	SUBCONTRACTED
Tritium	<2.5	100	Bq/l	SUBCONTRACTED
Total Indicative Dose	<0.1	0.1	mSv/year	SUBCONTRACTED

* No abnormal change

Client ID : PATRICK MORRISSEY
BULMERS IRELAND LTD
ANNERVILLE
CLONMEL
CO TIPPERARY
IRELAND

Job No. 08J05883
Report No : 34/54812
Date of Receipt : 30/10/2008
Delivery Mode : REFRIDGERATED VAN
Date testing initiated : 30/10/2008
Date of Report : 22/12/2008
Sample Cond. On Receipt: SATISFACTORY
Client Ref: RW4

No of Samples : 1
Sample Type : Water or wastewater

Page : 3 of 5

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Appendix I Pesticides

Organohalide Pesticides

Test	Result	Parametric Value	Unit	Method
Aldrin	<0.003	0.03	µg/l	SUBCONTRACTED
Chlordane-α	<0.002	0.1	µg/l	SUBCONTRACTED
Chlorothalonil	<0.003	0.1	µg/l	SUBCONTRACTED
Cyfluthrin	<0.003	0.1	µg/l	SUBCONTRACTED
Cypermethrin	<0.003	0.1	µg/l	SUBCONTRACTED
Deltamethrin	<0.004	0.1	µg/l	SUBCONTRACTED
Dichlobenil	<0.001	0.1	µg/l	SUBCONTRACTED
Dieldrin	<0.002	0.03	µg/l	SUBCONTRACTED
Endosulphan-α	<0.003	0.1	µg/l	SUBCONTRACTED
Endosulphan-β	<0.003	0.1	µg/l	SUBCONTRACTED
Endrin	<0.003	0.03	µg/l	SUBCONTRACTED
Fenvalerate	<0.003	0.1	µg/l	SUBCONTRACTED
HCH-α	<0.002	0.1	µg/l	SUBCONTRACTED
HCH-β	<0.002	0.1	µg/l	SUBCONTRACTED
HCH-d	<0.002	0.1	µg/l	SUBCONTRACTED
HCH-g (Lindane)	<0.002	0.1	µg/l	SUBCONTRACTED
Heptachlor	<0.002	0.1	µg/l	SUBCONTRACTED
Heptachlor Epoxide	<0.002	0.1	µg/l	SUBCONTRACTED
Hexachlorobenzene	<0.002	0.1	µg/l	SUBCONTRACTED
Isodrin	<0.003	0.03	µg/l	SUBCONTRACTED
Methoxychlor	<0.003	0.1	µg/l	SUBCONTRACTED
op-DDE	<0.002	0.1	µg/l	SUBCONTRACTED
op-DDT	<0.002	0.1	µg/l	SUBCONTRACTED
op-TDE	<0.002	0.1	µg/l	SUBCONTRACTED
Permethrin, cis	<0.003	0.1	µg/l	SUBCONTRACTED
Permethrin, trans	<0.004	0.1	µg/l	SUBCONTRACTED
pp-DDE	<0.002	0.1	µg/l	SUBCONTRACTED
pp-DDT	<0.002	0.1	µg/l	SUBCONTRACTED
pp-TDE	<0.003	0.1	µg/l	SUBCONTRACTED
Total Organohalide Pesticides	<0.004		µg/l	SUBCONTRACTED

Client ID :	PATRICK MORRISSEY BULMERS IRELAND LTD ANNERVILLE CLONMEL CO TIPPERARY IRELAND	Job No. : 08J05883 Report No : 34/54812 Date of Receipt : 30/10/2008 Delivery Mode : REFRIDGERATED VAN Date testing initiated : 30/10/2008 Date of Report : 22/12/2008 Sample Cond. On Receipt: SATISFACTORY Client Ref: RW4
No of Samples :	1	
Sample Type :	Water or wastewater	

Page : 4 of 5

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Appendix I Pesticides

Organophosphorous Pesticides

Test	Result	ParametricValue	Unit	Method
Azinphos-methyl	<0.004	0.1	µg/l	SUBCONTRACTED
Carbophenothion	<0.012	0.1	µg/l	SUBCONTRACTED
Chlorfenvinphos	<0.005	0.1	µg/l	SUBCONTRACTED
Demeton-s-methyl	<0.006	0.1	µg/l	SUBCONTRACTED
Diazinon	<0.006	0.1	µg/l	SUBCONTRACTED
Dichlorvos	<0.008	0.1	µg/l	SUBCONTRACTED
Dimethoate	<0.005	0.1	µg/l	SUBCONTRACTED
Fenitrothion	<0.004	0.1	µg/l	SUBCONTRACTED
Malathion	<0.004	0.1	µg/l	SUBCONTRACTED
Mevinphos	<0.004	0.1	µg/l	SUBCONTRACTED
Parathion ethyl	<0.006	0.1	µg/l	SUBCONTRACTED
Phorate	<0.009	0.1	µg/l	SUBCONTRACTED
Phosalone	<0.007	0.1	µg/l	SUBCONTRACTED
Pirimiphos methyl	<0.009	0.1	µg/l	SUBCONTRACTED
Propetamphos	<0.007	0.1	µg/l	SUBCONTRACTED
Triazophos	<0.003	0.1	µg/l	SUBCONTRACTED

Total Organo-P Pesticides	<0.012	µg/l	SUBCONTRACTED
---------------------------	--------	------	---------------

Client ID : PATRICK MORRISSEY
BULMERS IRELAND LTD
ANNERVILLE
CLONMEL
CO TIPPERARY
IRELAND

Job No. 08J05883
Report No : 34/54812
Date of Receipt : 30/10/2008
Delivery Mode : REFRIDGERATED VAN
Date testing initiated : 30/10/2008
Date of Report : 22/12/2008
Sample Cond. On Receipt: SATISFACTORY
Client Ref: RW4

No of Samples : 1
Sample Type : Water or wastewater

Page : 5 of 5

TEST REPORT

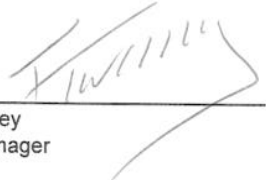
The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Appendix II Polycyclic Aromatic Hydrocarbons

Test	Result	Unit	Method
Benzo(b)fluoranthene	<0.001	µg/l	SUBCONTRACTED
Benzo -a-pyrene	<0.001	µg/l	SUBCONTRACTED
Benzo(g,h,i)perylene	<0.001	µg/l	SUBCONTRACTED
Benzo(k)fluoranthene	<0.001	µg/l	SUBCONTRACTED
Indeno(123-cd)pyrene	<0.002	µg/l	SUBCONTRACTED
Total PAH	<0.002	µg/l	SUBCONTRACTED

Appendix III Trihalomethanes (THM)

Test	Result	Unit	Method
Bromodichloromethane	<0.3	µg/l	SUBCONTRACTED
Bromoform	<0.3	µg/l	SUBCONTRACTED
Chloroform	<0.3	µg/l	SUBCONTRACTED
Dibromochloromethane	<0.3	µg/l	SUBCONTRACTED
Total THM	<0.3	µg/l	SUBCONTRACTED

Authorised by: 
Teresa A. Twomey
Environmental Div Manager

Client ID : PATRICK MORRISSEY
BULMERS IRELAND LTD
ANNERVILLE
CLONMEL
CO TIPPERARY
IRELAND

Job No. 08J05883
Report No : 34/54813
Date of Receipt : 30/10/2008
Delivery Mode : REFRIDGERATED VAN
Date testing initiated : 30/10/2008
Date of Report : 22/12/2008
Sample Cond. On Receipt: SATISFACTORY
Client Ref: RW3

No of Samples : 1
Sample Type : Water or wastewater

Page : 1 of 5

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Table B
Chemical Parameters

Test	Result	ParametricValue	Unit	Method
Acrylamide	<0.02	0.1	µg/l	SUBCONTRACTED
Antimony (Sb)	<0.12	5	µg/l	SUBCONTRACTED
Arsenic (As)	<0.37	10	µg/l	SUBCONTRACTED
Benzene	<0.3	1	µg/l	SUBCONTRACTED
Boron (B)	<0.017	1	mg/l	SUBCONTRACTED
Bromate as BrO3	<0.6	25	µg/l	SUBCONTRACTED
Cadmium (Cd)	<0.06	5	µg/l	APHA 1998 3111:B
Chromium (Cr)	<0.7	50	µg/l	SUBCONTRACTED
Copper (Cu)	<0.0027	2	mg/l	APHA 1998 3111:B
Cyanide (CN)	<0.7	50	µg/l	SUBCONTRACTED
1,2-Dichloroethane	<0.3	3	µg/l	SUBCONTRACTED
Epichlorohydrin	<0.1	0.1	µg/l	SUBCONTRACTED
Fluoride (F)	0.2	0.8*	mg/l	ETC981/APHA 1998S 4110:B
Lead (Pb)	<0.5	25	µg/l	SUBCONTRACTED
Mercury (Hg)	<0.012	1	µg/l	SUBCONTRACTED
Nickel (Ni)	<0.9	20	µg/l	APHA 1998 3111:B
Nitrate Nitrogen (NO3 as NO3)	13.7	50	mg/l	ET0443/APHA98 4500NO3:I
Nitrite Nitrogen (NO2 as NO2)	<0.03	0.5**	mg/l	ET0432/APHA98 4500NO3:I
Nitrate/50 + Nitrite/3	<1	<1	mg/l	
Pesticides - Total Appendix I	<0.020	0.5	µg/l	
PAH Appendix II	<0.002	0.1	µg/l	SUBCONTRACTED
Selenium (Se)	0.72	10	µg/l	SUBCONTRACTED
Tetrachloroethene and Trichloroethene (sum)	<0.6	10	µg/l	SUBCONTRACTED
Trihalomethanes Appendix III	<0.3	150	µg/l	SUBCONTRACTED
Vinyl Chloride	<0.3	0.5	µg/l	SUBCONTRACTED

* P. Value for supplies with naturally occurring fluoride = 1.5 mg/l

** Nitrite Limit for Waterworks is <0.1mg/l

Client ID : PATRICK MORRISSEY
BULMERS IRELAND LTD
ANNERVILLE
CLONMEL
CO TIPPERARY
IRELAND

Job No. 08J05883
Report No : 34/54813
Date of Receipt : 30/10/2008
Delivery Mode : REFRIDGERATED VAN
Date testing initiated : 30/10/2008
Date of Report : 22/12/2008
Sample Cond. On Receipt: SATISFACTORY
Client Ref: RW3

No of Samples : 1
Sample Type : Water or wastewater

Page : 2 of 5

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Table C
Indicator Parameters

Test	Result	ParametricValue	Unit	Method
Aluminium	<11	200	µg/l	APHA 1998 3111:D
Ammonia Nitrogen as NH4	<0.06	0.3	mg/l	ET0383/MEWAM1981
Chloride (Cl)	21	250	mg/l	ETC981/APHA 1998S 4110:B
Colour (filtered)	<2	Acceptable	Hazen	ET2992/MEWAM 1981 C&T
Conductivity @ 20°C	649	2500	µS/cm	ET0561/APHA1998:2510:B
Hydrogen Ion Concentration (pH)	7.3	6.5 ≤ pH ≤ 9.5	pH units	ET1241/APHA1998:4500H:B
Iron (Fe)	<7	200	µg/l	APHA 1998 3111:B
Manganese (Mn)	<1.5	50	µg/l	APHA 1998 3111:B
Odour	Acceptable	Acceptable		APHA 1998 2170
Sulphate (SO4)	17	250	mg/l	ETC981/APHA 1998S 4110:B
Sodium	10	200	mg/l	APHA 1998 3111:B
Taste	Acceptable	Acceptable		APHA 1998 2150
TOC as NPOC	0.59	*	mg/l	APHA1998 5310:B
Turbidity	0.1	Acceptable	NTU	APHA 1998 2130:B
Radioactivity :				
Gross alpha	0.043	0.1	Bq/l	SUBCONTRACTED
Gross beta	0.046	1	Bq/l	SUBCONTRACTED
Tritium	<2.5	100	Bq/l	SUBCONTRACTED
Total Indicative Dose	<0.1	0.1	mSv/year	SUBCONTRACTED

* No abnormal change

Client ID : PATRICK MORRISSEY
BULMERS IRELAND LTD
ANNERVILLE
CLONMEL
CO TIPPERARY
IRELAND

Job No. 08J05883
Report No : 34/54813
Date of Receipt : 30/10/2008
Delivery Mode : REFRIDGERATED VAN
Date testing initiated : 30/10/2008
Date of Report : 22/12/2008
Sample Cond. On Receipt: SATISFACTORY
Client Ref: RW3

No of Samples : 1
Sample Type : Water or wastewater

Page : 3 of 5

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Appendix I Pesticides

Organohalide Pesticides

Test	Result	ParametricValue	Unit	Method
Aldrin	<0.003	0.03	µg/l	SUBCONTRACTED
Chlordane-α	<0.002	0.1	µg/l	SUBCONTRACTED
Chlorothalonil	<0.003	0.1	µg/l	SUBCONTRACTED
Cyfluthrin	<0.003	0.1	µg/l	SUBCONTRACTED
Cypermethrin	<0.003	0.1	µg/l	SUBCONTRACTED
Deltamethrin	<0.004	0.1	µg/l	SUBCONTRACTED
Dichlobenil	<0.001	0.1	µg/l	SUBCONTRACTED
Dieldrin	<0.002	0.03	µg/l	SUBCONTRACTED
Endosulphan-α	<0.003	0.1	µg/l	SUBCONTRACTED
Endosulphan-β	<0.003	0.1	µg/l	SUBCONTRACTED
Endrin	<0.003	0.03	µg/l	SUBCONTRACTED
Fenvalerate	<0.003	0.1	µg/l	SUBCONTRACTED
HCH-α	<0.002	0.1	µg/l	SUBCONTRACTED
HCH-β	<0.002	0.1	µg/l	SUBCONTRACTED
HCH-d	<0.002	0.1	µg/l	SUBCONTRACTED
HCH-g (Lindane)	<0.002	0.1	µg/l	SUBCONTRACTED
Heptachlor	<0.002	0.1	µg/l	SUBCONTRACTED
Heptachlor Epoxide	<0.002	0.1	µg/l	SUBCONTRACTED
Hexachlorobenzene	<0.002	0.1	µg/l	SUBCONTRACTED
Isodrin	<0.003	0.03	µg/l	SUBCONTRACTED
Methoxychlor	<0.003	0.1	µg/l	SUBCONTRACTED
op-DDE	<0.002	0.1	µg/l	SUBCONTRACTED
op-DDT	<0.002	0.1	µg/l	SUBCONTRACTED
op-TDE	<0.002	0.1	µg/l	SUBCONTRACTED
Permethrin, cis	<0.003	0.1	µg/l	SUBCONTRACTED
Permethrin, trans	<0.004	0.1	µg/l	SUBCONTRACTED
pp-DDE	<0.002	0.1	µg/l	SUBCONTRACTED
pp-DDT	<0.002	0.1	µg/l	SUBCONTRACTED
pp-TDE	<0.003	0.1	µg/l	SUBCONTRACTED
Total Organohalide Pesticides	<0.004		µg/l	SUBCONTRACTED

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Sample Type : Water or wastewater

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TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

Appendix I Pesticides

Organophosphorous Pesticides

Test	Result	Parametric Value	Unit	Method
Azinphos-methyl	<0.004	0.1	µg/l	SUBCONTRACTED
Carbophenothion	<0.012	0.1	µg/l	SUBCONTRACTED
Chlorfenvinphos	<0.005	0.1	µg/l	SUBCONTRACTED
Demeton-s-methyl	<0.006	0.1	µg/l	SUBCONTRACTED
Diazinon	<0.006	0.1	µg/l	SUBCONTRACTED
Dichlorvos	<0.008	0.1	µg/l	SUBCONTRACTED
Dimethoate	<0.005	0.1	µg/l	SUBCONTRACTED
Fenitrothion	<0.004	0.1	µg/l	SUBCONTRACTED
Malathion	<0.004	0.1	µg/l	SUBCONTRACTED
Mevinphos	<0.004	0.1	µg/l	SUBCONTRACTED
Parathion ethyl	<0.006	0.1	µg/l	SUBCONTRACTED
Phorate	<0.009	0.1	µg/l	SUBCONTRACTED
Phosalone	<0.007	0.1	µg/l	SUBCONTRACTED
Pirimiphos methyl	<0.009	0.1	µg/l	SUBCONTRACTED
Propetamphos	<0.007	0.1	µg/l	SUBCONTRACTED
Triazophos	<0.003	0.1	µg/l	SUBCONTRACTED
Total Organo-P Pesticides	<0.012		µg/l	SUBCONTRACTED

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Page : 5 of 5

TEST REPORT

The water was analysed for the parameters stated in SI No 278 of 2007, EU directive 98/83/EC.
Non conforming results are highlighted in **bold**.

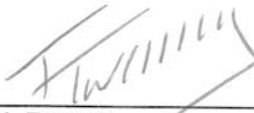
Appendix II Polycyclic Aromatic Hydrocarbons

Test	Result	Unit	Method
Benzo(b)fluoranthene	<0.001	µg/l	SUBCONTRACTED
Benzo -a-pyrene	<0.001	µg/l	SUBCONTRACTED
Benzo(g,h,i)perylene	<0.001	µg/l	SUBCONTRACTED
Benzo(k)fluoranthene	<0.001	µg/l	SUBCONTRACTED
Indeno(123-cd)pyrene	<0.002	µg/l	SUBCONTRACTED
Total PAH	<0.002	µg/l	SUBCONTRACTED

Appendix III Trihalomethanes (THM)

Test	Result	Unit	Method
Bromodichloromethane	<0.3	µg/l	SUBCONTRACTED
Bromoform	<0.3	µg/l	SUBCONTRACTED
Chloroform	<0.3	µg/l	SUBCONTRACTED
Dibromochloromethane	<0.3	µg/l	SUBCONTRACTED
Total THM	<0.3	µg/l	SUBCONTRACTED

Authorised by:


Teresa A. Twomey
Environmental Div Manager