ANNUAL ENVIRONMENTAL REPORT

KMK METALS RECYCLING LTD

WASTE LICENCE REF: W0113-03

CAPPINCUR INDUSTRIAL ESTATE, DAINGEAN ROAD, TULLAMORE, CO. OFFALY

JANUARY 2008-December 2008

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1.0 REPORTING PERIOD

The reporting period for this Annual Environmental Report is 1st January 2008 to 31st of December 2008.

2.0 WASTE ACTIVITIES CARRIED OUT AT THE FACILITY

The principal class of activity is:

Class 13 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.

Non Technical Description: Temporary storage and processing of waste materials at the facility prior to removal off site for further metals recovery at an alternative facility.

Consequently, other activities carried out on site include:

Class 3 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Recycling or reclamation of metals and metal compounds.

Non Technical Description: Collection, acceptance and processing of metallic wastes (hazardous and non hazardous including electronic and electrical wastes and liquids containing dissolved metals) as part of waste loads arriving at the facility prior to removal off site for recycling or recovery.

Class 4 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Recycling or reclamation of other inorganic materials.

Non Technical Description: Acceptance of plastic components and packaging as part of incoming waste loads.

Class 6 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Recovery of components used for pollution abatement.

Non Technical Description: Acceptance of auto catalysts, filters etc.

Class 7 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Recovery of components from catalysts.

Non Technical Description: Recovery of metals from catalysts in manufacturing processes (this applies to liquids and solids)

Class 11 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Use of waste obtained from any activity referred to in a preceding paragraph of this schedule.

Non Technical Description: Re-use of some waste materials e.g. metal drums, IBCs, cardboard boxes and textile IBC bulk bags as waste receptacles.

Class 12 of the Fourth Schedule (Waste Recovery Activities) of the Waste Management Act (1996): Exchange of waste for submission to any activity referred to in a preceding paragraph of this schedule.

Non Technical Description: Trading activities in waste management.

3.0 WASTE MANAGEMENT RECORD

3.1 Waste Received in 2008

Waste is received in the KMK Metals Ltd facility from the following sources; amenity sites, commercials customers, industrial customers and transfer station waste management sites.

A summary of all waste received during 2008 is given below:

Source of waste accepted.	**Total quantities (tonnes)**
Civic amenity sites	9,057.197
Commercial	6,513.106
Industrial	962.955
Transfer Stations	2,444.683
Total	**18,977.440tonnes**

It is estimated that 85% of the total waste intake in 2008 was waste electrical and electronic equipment (WEEE).
A full breakdown of waste types and quantities accepted for 2008 is included in Appendix 1 attached to this AER.

3.2 Waste Dispatched from the Facility for Recovery in 2008

The total quantity of waste dispatched from the facility in 2008 was 18,977.44 tonnes.

A summary of all waste dispatched during 2008 is included in Appendix 2 attached to this AER.

Please note that there is a carry over of waste material from the year ending 2008 into the beginning of 2009 and this is waste material left in stock (See Appendix 3) which was 565.274 tonnes.

4.0 EMISSIONS FROM THE FACILITY

A summary and interpretation of all emissions monitoring carried out at the facility during 2008 is discussed in detail below.

4.1 Dust

Dust deposition assessment was carried out at the site from 9th August to 8th September 2008 by ENVIROCO Management Ltd.

The Dust Deposition Assessment Report is included in Appendix 4 of this AER.

All dust deposition monitoring was based on the Bergerhoff method, 'Measurement of Dustfall Using the Bergerhoff Instrument (Standard Method)' VDI 2119. The Waste Licence requirements (ref. W0113-03) for dust monitoring are presented in table 4.1.1 below. A total of five dust monitoring locations were selected (A2-1, A2-2, A2-3, A2-4, A2-5 and A2-6).

Table 4.1.1 Dust Monitoring Licence Requirements

Stations	**Parameter ($mg/m^2/day$)**	**Monitoring frequency**	**Analysis Method/ Technique**
A2-1, A2-2, A2-3, A2-4, A2-5 and A2-6	Total Dust Deposition	Annually[note1]	Standard method[note3]
	Metal content [note2]	Annually	Standard method

Note 1: During the period May to September, or otherwise specified in writing by the Agency.
Note 2: Analysis to include the following metals: Al, As, Cd, Cr, Cu, Fe, Hg, Ni, Pb and Zn.
Note 3: Standard VDI 2119 (Measurement of dustfall, Determination of dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institiue). Any modifications to eliminate interference due to algae growth in the gauge should be reported to the Agency.

Please note that for the purpose of cross referencing the actual dust results from the laboratory with the licence monitoring points, the following comparison is used:

ENVIROCO lab ref:		KMK Licence location
D1	→	A2-1
D2	→	A2-2
D3	→	A2-4
D4	→	A2-3
D5	→	A2-5
D6	→	A2-6

A summary of Dust Deposition Results for 5 locations is tabulated below in table 4.1.2.

Table 4.1.2 Dust Monitoring Results

Parameters	Dust deposition rate (mg/m^2/day)					
	A2-1	**A2-2**	**A2-3**	**A2-4**	**A2-5**	**A2-6**
Total Dust	280	338	**580**	**1012**	**1084**	**902**
Copper (Cu)	<1	<1	<1	<1	<1	12
Iron (Fe)	<10	<10	<10	<10	<10	173
Arsenic (As)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Zinc (Zn)	<5	<5	<5	<5	<5	165
Chromium (Cr)	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
Nickel (Ni)	<0.5	<0.5	<0.5	<0.5	<0.5	2
Aluminium (Al)	<20	<20	<20	<20	<20	128
Lead (Pb)	<0.5	<0.5	<0.5	<0.5	<0.5	31
Cadmium (Cd)	<0.5	<0.5	<0.5	<0.5	<0.5	0.9
Mercury (Hg)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Schedule B.5 of Waste Licence W0113-03 stipulates a dust deposition limit of 350mg/m^2/day. As can be seen from the above table the rate of dust deposition recorded at stations A2-3, A2-4, A2-5 and A2-6 exceeded the recommended limits. The elevated rate of dust deposition recorded at A2-5, which gave the highest result was due to the location of the dust receptacle being under coniferous trees along the western boundary of the site. This location was the nearest possible to the specified location as the LHA (Large Household Appliance) Baler was in the specified sampling location. Therefore the receptacle contained pine needles and other organic matter at the end of the monitoring period. This in turn contributed to the high dust levels at this station.

Stations A2-4 and A2-6 were also in exceedence of the recommended limit, this was largely related to the proximity of the stations to moving vehicles

due to traffic movement within and around the KMK Metals Recycling Ltd site as these dust gauges were situated close to the vehicular entrance to the site. Station A2-3 which provided a result of 580mg/m^2/day was also above the recommended limit value which was unusual at this location as there are no activities taking place in the vicinity. The result could only be attributed to high levels of background dust during the monitoring period.

Analysis of the dust samples for metals content showed the levels to be below the actual laboratory limits of detection with the exception of A2-6. This was related to the station being located at a very active area of the site and therefore would have been largely influenced by loading/unloading of trucks and the vehicular entrance/exiting the D4 area.

4.2 Noise

The Waste Licence requirements (ref. W0113-03) for noise monitoring are presented in table 4.2.1 below.

Table 4.2.1 Noise Monitoring Licence Requirements

Stations	**Parameter**	**Monitoring frequency**	**Analysis Method/ Technique**
NE1, NE2, NE3, NE4, NE5, NE6	L(A)eq[30 minutes], $L(A)_{10}$ [30 minutes], $L(A)_{90}$ [30 minutes] and 1/3 Octave Band Analysis	Annually	Standard Method[Note1]

Note 1: International Standards Organisation, ISO 1996 Acoustics – Description and Measurement of Environmental Noise. Parts 1,2 and 3.

A day-time noise assessment was carried out at the site on the 8th August 2008 by ENVIROCO Management Ltd. The Noise Monitoring Survey report is included in Appendix 5 of this AER. Please note for the purpose of cross referencing the actual noise from the monitoring event locations with the licence monitoring locations, the following comparison is used.

ENVIROCO Ref.		KMK Licence Location
N1	→	NE1
N2	→	NE2
N3	→	NE3
N4	→	NE4
N5	→	NE5
N6	→	NE6

Monitoring Locations:

- N1 Located in the car-park at the fence boundary.
- N2 Located at the Eastern boundary, beside the disused portacabin.
- N3 This monitoring point was located at the south-western boundary.
- N4 Located at the facilities western boundary.
- N5 This monitoring point was located at the north-western boundary at the washing machine processing area.
- N6 Located at the northern boundary of the site at the fridge store.

All noise measurements were made according to the requirements of ISO 1996: Acoustics – Description and Measurement of Environmental Noise.

Summary of Noise Results is tabulated in table 4.2.2.

Table 4.2.2 Noise Monitoring Results

Monitoring Location	Time	$L_{Aeq, 30min}$ dB(A)	$L_{A90, 30min}$ dB(A)	$L_{A10, 30min}$ dB(A)	Major Noise Sources
N1	10:01	58	46	60	The main sources of noise were from idling trucks and passing traffic into the KMK facility as well as to surrounding units. Cars exiting the site and a truck horn sounding.
N2	10:36	63	46	66	The main noise sources at this location came from forklift movements, reverse alarms, engines idling at the site entrance, doors banging and the loading of a trailor by forklift in close proximity to the noise meter.
N3	9:56	63	58	66	A lot of the noise arising at this location could be sourced from processing taking place in the D3 television dismantling area. A radio located within the D3 area was also running throughout the monitoring period. Reverse alarms and horns sounding from forklifts in the D3 process area.
N4	11:03	63	61	65	The main noise sources at this location arose from the following: a neighbouring industrial estate, the operation of the LHA Baler, a truck entering the D area, forklifts in operation and the sound of steel being crushed in the baler unit. Background noise arose from leaves rustling in the nearby trees.
N5	10:27	59	56	61	Forklift movements and the unloading of a truck carrying fridges were taking place around the corner from this monitoring location. The idling engine of the LHA Baler unit was also audible during monitoring. The sound of metal scraping along the ground also occurred for a short period of time.
N6	11:38	72	59	75	A broad range of noises were audible at this location. The unloading of white goods truck by forklift @D4 yard took place throughout the monitoring period. This resulted in the sounding of reverse alarms, revving of engines and scraping of metal. General site activities and passing traffic were also audible at this monitoring location.

All day time monitoring points exceeded the Waste Licence day time limit of $L_{Aeq, 30min}$ = 55 dB (A).

An analysis of the frequency spectrums at each of the noise monitoring locations was carried out. Tonal noise was detected at three monitoring locations during the day time monitoring event at N3, N4 and N6. It is considered that the tonal noise detected at location N3 was attributable to processing operations from within the D3 area. Tonal noise detected at location N4 was noted as being attributable to site operations including forklifts and the LHA Baler unit. Tonal noise detected at location N6 was noted as attributable to passing traffic, and the unloading of a truck in the D4 yard area. Each of the locations recorded frequencies which ranged from N3= 800, N4= 2 KHz and N9= 3.15 KHz respectively.

Due to the industrial nature of the site and the distance from the nearest noise sensitive receptor, the likelihood of processes at the KMK Metals Recycling Ltd facility having negative impacts on the nearest dwelling is minimal.

4.3 Surface Water

Surface water samples were taken directly from the outlets CX and DX on 10th of March 2008, 1st July 2008, 22nd October 2008 for all parameters applicable under the licence limits. On the 9th December 2008 a water sample was taken from the CX outlet only, as there was no flow from the DX outlet due to de-sludging and cleaning of the interceptor in November 2008. Due to a mix up at the laboratory sample CX was not tested for Diesel Range Organics or Mineral Oils, this was through no fault of KMK Metals and all efforts will be made to ensure that this does not happen with future sampling. Sample CX was tested for all other parameters applicable under the licence limits. The test certificates are included in Appendix 6 of this AER. A summary of Surface Water Results are tabulated below in table 4.3.1.

Table 4.3.1 Surface Water Monitoring Results 2008

Parameters	CX 10/03/08	DX 10/03/08	CX 01/07/08	DX 01/07/08	CX 22/10/08	DX 22/10/08	CX 09/12/08	DX 09/12/08	1989 Surface Water Regs. *
Aluminium (µg/l)	206	265	2	44	133	396	95	-	NRG
Arsenic (µg/l)	<1	3	<1	<1	<1	<1	<1	-	100
Chromium (µg/l)	<1	<1	<1	4	<1	5	1	-	50
Chloride	120	259	173	473	84	156	82		NRG
Conductivity (µS/cm)	664	**1087**	603	**1087**	668	816	862	-	1000
COD (mg/l)	17	**113**	16	**198**	**73**	**192**	22		40
Iron (mg/l)	0.066	0.063	0.010	0.535	0.061	0.516	0.019	-	2.0
Lead (mg/l)	<0.001	0.001	0.001	0.029	0.001	0.012	<0.001	-	0.05
Mercury (µg/l)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	1
Nickel (µg /l)	6	14	<	24	27	14	7	-	NRG
pH (units)	7.21	8.24	6.90	6.98	7.64	7.61	7.65	-	5.5 – 8.5
Suspended Solids (mg/l)	<10	56	<10	98	34	43	<10	-	Varies
Zinc (mg/l)	0.054	0.053	0.051	0.168	0.010	0.017	0.039	-	5
Total Organic Carbon	5	30	5	37	16	34	11		NRG
DRO's (µg /l)	<0.001	0.563	<0.001	<0.001	0.856	0.570	-		NRG
Mineral Oils(µg /l)	<10	**113**	<10	<10	<10	<10	-		NRG

- = not measured
NRG: No reference given
* Limits for surface waters / rivers i.e. **EPA Surface Water Regs (1989) mandatory value (A3 water). Please note that KMK discharge is not going to an actual river it is a land drain and there are no limits for land drains. Shaded area denotes contested values not approved by KMK Metals Recycling Ltd – see notes on interpretation.

Interpretation of results from the March, July and October of 2008.

The receiving water (land drain) has been historically eutrophic and has little importance or significance. There are no licence limits set for the surface water discharge to drain from the facility.

The discharge from DX is more significant than the discharge to CX in relation to COD levels. The results for all DX samples throughout the sampling year exceeded the licence limit of 40 for COD set by the 1989 Surface Water Regs, while just one of the CX samples (October) exceeded the limit. The exceedence of COD in the March DX sample was directly linked to the exceedence for mineral oil, there was also a slightly raised conductivity level in the DX sample. These results may be attributed to the location of the LHA Baler unit in close proximity to the sampling pipe and heavy rainfall prior to the sampling. The July DX sample gave a result of 198mg/l for COD; this was a high result. Conductivity levels in the DX sample were also above the recommended limits and both COD and conductivity were due to the presence of detergent residues from the baling of washing machines at the D yard area. Overall the parameter results for the October sampling of outlets CX and DX were all within the recommended limits except for COD. Both CX and DX exceeded the limit of 40mg/l. These results were deemed to be linked to the location of the LHA Baler in close proximity to the sampling pipe. The sample taken at outlet CX did not exceed recommended limits for any of the parameters tested. Due to a mix up at the laboratory the sample was not tested for the presence of DRO's or Mineral Oils. This oversight will not occur in the 2009 monitoring period. As mentioned previously it was not possible to obtain a sample from the DX outlet in December, this was directly linked to the de-sludging and cleaning of the interceptors in November which is required in compliance with the facilities waste licence; along with inadequate levels of rainfall during the December period, which resulted in no flow from DX at the time of sampling.

Based on the above analysis data, and nature of activity at the site, it is considered that KMK Metals Recycling Ltd discharge is not resulting in a significant negative effect on the land drain and the site interceptors are operating adequately (removal of silts, metals, physical debris etc).

All surface water monitoring was for the most part in compliance with the waste licence ref: W0113-03.

4.4 Groundwater

Two groundwater samples (GW1 and GW2) were taken from the KMK Metals Recycling Ltd site on the 10th March 2008. The test certificate is included in Appendix 6 of this AER. A Summary of Groundwater Results is tabulated below in table 4.4.1

Table 4.4.1 Groundwater Monitoring Results

Parameters	GW1 10/03/08	GW 2 10/03/08	EC Drinking Water Guideline SI 439/2000*
Aluminium (µg/l)	170	186	200
Arsenic (µg/l)	<1	3	10
Chloride (mg/l)	15	15	250
Chromium (µg/l)	<1	<1	50
Conductivity (µS/cm)	546	544	2500
Iron (µg/l)	0.244	0.237	200
Lead (µg/l)	1	<1	10
Nickel (µg/l)	2	**135**	20
Nitrate NO_3 (mg/l)	<0.03	<0.03	50
pH (units)	7.59	7.52	6.5 – 9.5
Kjeldahl Nitrogen as N (mg/l)	4	10	NRG
Ammoniacal Nitrogen as N (mg/l)	<0.2	<0.2	0.23
Total Nitrogen (mg/l)	4	10	NRG
Faecal Coliforms (cfu/100mls)	<1	<1	0

* EC Drinking Water Guideline SI 439/2000 used here in the absence of any limits specified in the waste licence.

Interpretation of results for March 2008.

The results from the sample taken on 10th March 2008 shows that all parameters for GW1 and GW2 were in line with the EC Drinking Water Guidelines with the exception of elevated nickel levels in GW2 which are naturally occurring in soils and underlying rock deposits.

5.0 ENERGY CONSUMPTION AND COST

Electricity, green diesel and kerosene are used at the facility. The following tables summarise the electricity and fuel consumption and CO_2 emission at the facility for 2006 and 2008.

Table 5.1.1 Breakdown of the energy consumption for the years 2006 and 2008

	Consumption, kWh*			
	2006	**%**	**2008**	**%**
Electricity	59,407	23.3	50,682	11
Kerosene	31,720	12.4	69,910	14
Green Diesel	163,858	64.3	360,774	75
Total	**254,985**	**100**	**481,366**	**100**

*Energy conversion factors: kerosene 10.4kWh/l and green diesel 10.8kWh/l.

Table 5.1.2 Breakdown of the energy costs for the years 2006 and 2008

	Cost, €			
	2006	**%**	**2008**	**%**
Electricity	14,107	58.6	11,657	27.6
Kerosene	1,581	6.6	3,021	7.2
Green Diesel	8,396	34.8	27,497	65.2
Total	**24,084**	**100**	**42,175**	**100**

Table 5.1.3 CO_2 emissions in 2006 and 2008

	CO_2 emissions, tonnes*			
	2006	**%**	**2008**	**%**
Electricity	46.1	47.2	39.3	25.8
Kerosene	8.2	8.4	17.97	11.8
Green Diesel	43.3	44.4	95.2	62.4
Total	**97.6**	**100**	**152.47**	**100**

*Energy to Carbon conversion factors: electricity 0.776kg CO_2 /kWh, Kerosene 0.257 kg CO_2 /kWh and Green Diesel 0.264 kg CO_2 / kWh

In 2008 the total energy consumption increased by approximately 86% from 2006. The green diesel consumption increased by approximately 120%, while electricity consumption reduced by approximately 15% and kerosene consumption was increased by 120% at the facility in 2008. The increase in total energy consumption in 2008, especially in green diesel and kerosene consumption were due to increases in the quantities of waste (both WEEE and metallic) being handled and processed at the facility,

approximately 13.8%. The use of both LHA Baler units and increased use of forklifts have also contributed to the increase in green diesel consumption at the site. The increase in kerosene usage was largely influenced by the addition of a Roankabin to the facility for the administration staff, which required heating throughout the year.

6.0 MOBILE BUNDS ASSESSMENT

As a required in Condition 3.15 of the licence a mobile bund assessment was conducted at the KMK facility in June 2008. The results of this assessment, along with the subsequent report were submitted to the Agency in June of 2008.

7.0 INCIDENTS SUMMARY

No complaints were received at the facility during the reporting period.

8.0 DEVELOPMENT WORKS

8.1 Development works in 2008

The following developments have taken place at the KMK facility in 2008:

- Internal refurbishment of the existing building at D4 area i.e. new concrete floor, internal retaining bund wall around the building, new shutter doors etc.
- Purchase of Battery Sorting Equipment for the sorting of Alkaline batteries onsite.
- The installation of a roof over the D yard area, this area is now referred as the DX building. This greatly increases the site area under cover for WEEE management.

A new accident prevention policy was developed by the licensee at the facility in November 2008.

8.2 Proposed Development for 2009

The following development works are proposed for 2009:

- Upgrade to drainage works at the site (storm water run-off from D4 yard will be connected to the existing interceptor at D3 area prior to discharge to DX outlet) as per condition 3.17 of licence ref: W0113-03.

- Installation of a gully system with sump around the LHA Baling Unit in the D building, which will be connected to the existing interceptor in the D3 yard area prior to discharge to the DX outlet.

- On-going maintenance of D5 area which is being used for car parking and planning is also granted for a weighbridge subject to assessment of operational requirements at the facility.

- Installation of a weighbridge in the D5 area.

9.0 ENVIRONMENTAL OBJECTIVES AND TARGETS

9.1 Progress in 2008

A list of objectives and targets and their current status is included below in table 9.1.1 and are regulated by the company environmental management system. Most of the scheduled objectives and targets were achieved in 2008.

Table 9.1.1 Environmental Objectives and Targets for 2008 – **status of projects**.

Objectives	Target	Time Scale set	Responsibility	Status
1. Completion of roof cover at D Yard and erect cover for external 'D3' area.	To increase WEEE storage space under roof and so fulfil business objectives in line with best practice and improved treatment facility.	September 2008	Kurt M. Kyck	Roof complete over D yard area. Cover over D3 area was cancelled due to other project commitments.
2. Development of building at D4 area for 'Accumulator'	To develop the existing building at D4 area for household battery recovery in line with the 'Accumulator' business at KMK Metals and the Battery Regulations. This will involve building refurbishment and new waste management operations.	July 2008	Kurt M. Kyck Charlotte Walker	Building at D4 was developed for battery recycling purposes with new floors, internal bund walls and other improvements.
3. Continuous development and implementation of material management software system for stock control.	To improve efficiency and service to customers	Twelve months	Kurt M. Kyck Charlotte Walker	On-going project, continual IT maintenance work being carried out for software system.

Table 9.1.1 Environmental Objectives and Targets for 2008 continued

Objectives	**Target**	**Time Scale set**	**Responsibility**	**Status**
4. Improvement of drainage works at D4	To effectively control and treat all storm water run-off from the facility yards in line with best practise and the current waste licence ref; W0113-03.	September 2008	Kurt M. Kyck	Drainage works at D4 area was postponed due to planning refusal at this area for a proposed roof structure. This project is carried forward for 2009.
5. Environmental Liabilities Risk Assessment and Decommissioning Plan for financial bond purposes	Assess company site and operations from a liabilities and risk assessment perspective as per EPA guidance document Survey site, desk study and data gathering. ELRA report and bond recommendations	August 2008	C Walker & ENVIROCO Management Ltd	Completed in January 2009
6. Improvements to WEEE handling at facility	Submit report to EPA on duty and standby capacity of waste handling and processing equipment in relation to WEEE	July 2008	KMK Metals management	Completed

Table 9.1.1 Environmental Objectives and Targets for 2008 continued

Objectives	**Target**	**Time Scale set**	**Responsibility**	**Status**
7. Development of KMK's new website incorporating the Batteries Directive 2006/66/EC	To incorporate the Batteries Directive 2006/66/EC, www.accumaulator.ie	October 2008	KMK Metals management	Completed
8. Updating of KMK's www.weeerecycle.ie website	To improve the service options and information available to customers.	October 2008	KMK Metals management	Completed
9. Site house-keeping improvements	Assign responsibilities to individual employees for designated facility zones e.g. A,B,C,D,D1,D2,D3,D4 etc	June 2008	C. Walker Enda Thornton Max Kyck	Completed & On-going
10. Documentation Improvements	Complete review/audit of existing Waste Licence associated documentation with the purpose of improving the efficiency of this documentation in line with company operations. Areas of particular importance including: • Documentation referred to in Condition 11.7 of the licence. • Training	June 2008	C. Walker ENVIROCO Management Ltd	On-going

Table 9.1.1 Environmental Objectives and Targets for 2008 continued

Objectives	**Target**	**Time Scale set**	**Responsibility**	**Status**
11. Training Improvements	To re-develop training procedure Upgrade records for employees at the facility. Incorporation of a Multi Lingual Tool purchased from Bubble	June 2008 Ongoing	C. Walker	Completed Ongoing Completed
12. Installation and maintenance of a CCTV system	As per condition 3.4.2 of licence ref: W0113-03.	July 2008	Kurt M. Kyck	Completed

9.2 Schedule for 2009

It is the case that all the objectives and targets listed above which have not been completed by end 2008 will be carried forward for the following year.

A summary of the new scheduled objectives and targets for the year ending 2009 is listed in table 8.2.1 below.

Table 9.2.1 Environmental Objectives and Targets for 2009

Objectives	Target	Time Scale	Responsibility	Status
1. Installation of weighbridge and maintenance of the D5 area	To enable KMK Metals waste accepted to and removed from the facility to be accurately weighed (on-site) and recorded in compliance with Condition 3.8 of the waste licence.	September 2009	Kurt M. Kyck	Planned
2. Improvement of drainage works at D4	To effectively control and treat all storm water run-off from the facility yards in line with best practise and the current waste licence ref; W0113-03.	August 2009	Kurt M. Kyck	Planned
3. The emptying of the D3 yard interceptor and tank prior to any discharges from the DX outlet.	To ensure there will be no discharge from the DX outlet.	Ongoing	KMK Metals Management C. Walker	Planned
4. Installation of a gully system and sump in the D building area.	To effectively control and treat any leakage/spillages associated with the LHA Baler Unit and its operations under the new D building.	September 2009	Kurt M. Kyck	Planned

Table 9.2.1 Environmental Objectives and Targets for 2009 continued

Objectives	Target	Time Scale	Responsibility	Status
5. Purchase a battery sorting plant for the D4 specialized building.	To facilitate the recovery of household batteries at the site in the D4 building.	February 2009	KMK Metals management	Completed
6. Completion of KMK's computer management system	To improve efficiency in the tracking, recording and overall management of waste at the facility.	March 2009	KMK Metals management	Planned
7. Updating of KMK's original website www.metalsrecycling.ie	To improve the service options and information available to customers.	July 2009	KMK Metals management	On-going
8. Training improvements	Update records for employees at facility and increase an awareness of waste licence conditions for all key staff at the facility.	On-going	C. Walker	On-going
	Provide training of staff on the collection and sorting of Alkaline batteries in relation to the Battery Directive 2006/66/EC	February 2009	KMK Metals management	Completed
	Provide training of staff for the battery sorting plant by specialists from the Netherlands.	March 2009	KMK Metals management	Booked
	Provide training of staff on the collection and sorting of Fluorescent Tubes.	March 2009	KMK Metals management	Completed

Table 9.2.1 Environmental Objectives and Targets for 2009 continued

Objectives	Target	Time Scale	Responsibility	Status
9. Site house-keeping improvements	Ensure all designated employees responsible for housekeeping at the facility carry out their duties as specified. Ensure all records relating to housekeeping, visual inspections, checklists are updated, maintain filed accordingly.	On-going On-going	C. Walker Enda Thornton Max Kyck	On-going Constantly under review
10.New Waste Licence application to the EPA	Seeking a review of the current licence W0113-03 to facilitate an expected increase in tonnages of waste to be handled at the KMK facility and an expansion in licence boundary for the facility.	December 2009	KMK management and ENVIROCO Management Ltd	Planned
11. Documentation improvements	Complete review/audit of existing ISO 14001 and Waste licence associated documentation with the express purpose of improving the efficiency of this documentation in line with company operations. Areas of particular importance are: • Training • Document control as per ISO 14001 • Environmental legislation register • Environmental Aspects register	On-going	C. Walker ENVIROCO Mgt Ltd	On-going

10.0 FINANCIAL PROVISIONS, MANAGEMENT & STAFFING STRUCTURE, PROGRAMME FOR PUBLIC INFORMATION

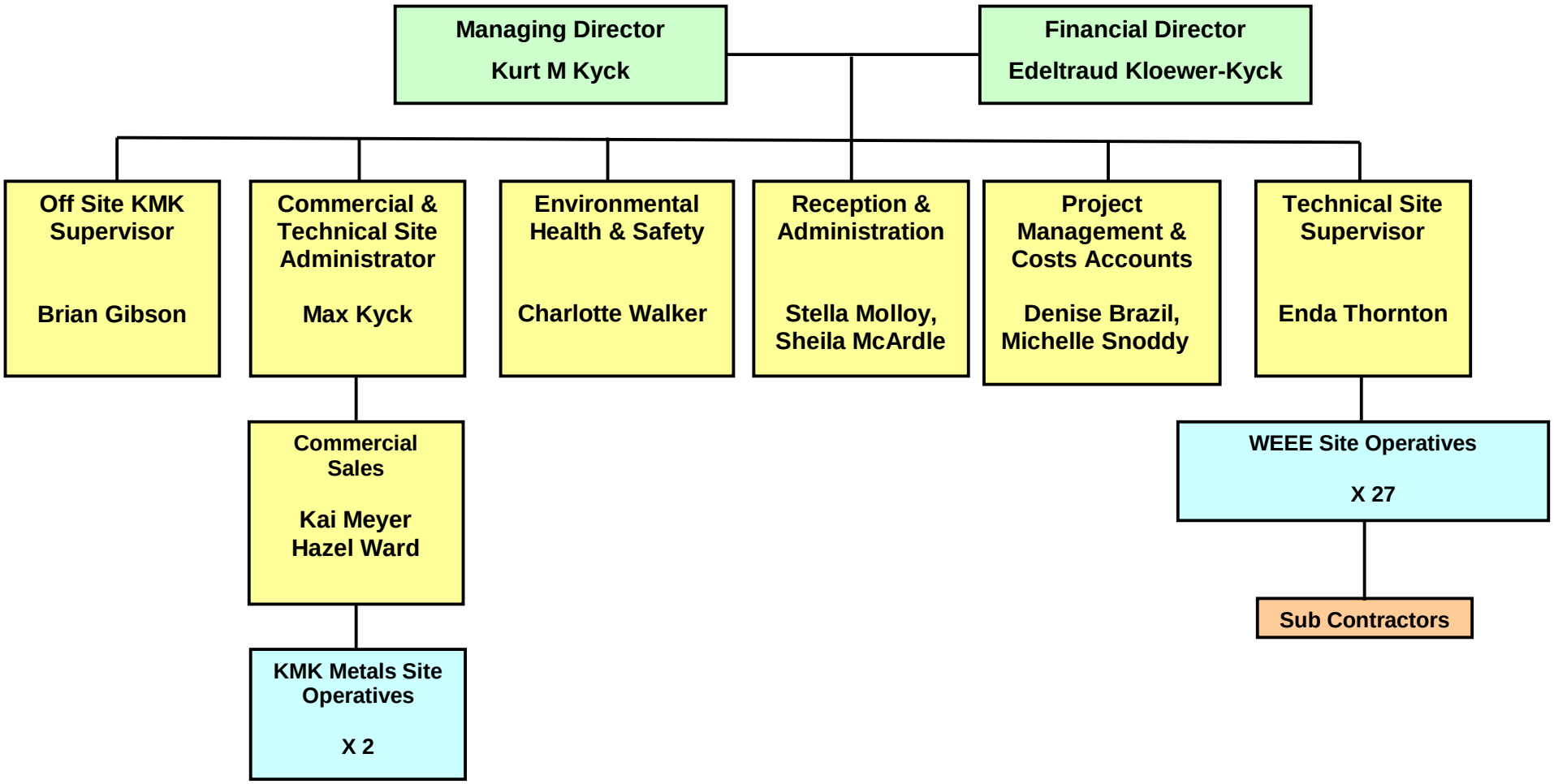
10.1 Financial Provisions

KMK management wish to confirm that adequate financial provisions are in place for all proposed environmental improvements and controls for the forthcoming year and thereafter. Currently KMK Metals Recycling Ltd have a Guarantee Bond with Offaly County Council, which will be transferred to the EPA based on the outcome of the ELRA report findings which were submitted to the Agency in January 2009.

10.2 Management & Staffing Structure

Organisational Chart of the Environmental Management Structure at KMK Metals Recycling Ltd is presented below.

KMK Metals Recycling Ltd Staffing Structure



10.3 Programme for Public Information

A file cabinet is in place at the KMK Metals Recycling Ltd facility (EHS Office) and contains all data and information similar to that supplied to the Agency in compliance with the Waste Licence (e.g. monitoring data, ISO 14001 documents, environmental policy etc).

The company's three websites (detailed below) are also a valuable source of information readily available to the public regarding company operations and environmental progress.

- (www.metalsrecycling.ie)
- (www.weeerecycle.ie)
- (www.accumulator.ie)

11.0 STAFF TRAINING

The following environmental training has been completed during the reporting period January 1st 2008 to December 31st 2008.

Table 10.1.1 Environmental Training for Staff

Course	Dates	Location	Trainer	Participants
ADR Training	January 2008	On-site	Frank Daly & Associates	Company Drivers
Defibrillator Training	February 2008	Onsite	Cannon Fire & Safety Systems	6 people (office Staff)
Health & Safety Day: Health and Safety for Manager & Supervisors	June 2008	Dublin	ISME	Charlotte Walker
Multi Lingual Tool	September 2008	Onsite	SpeechBubble	General Operatives
Occupational First Aid Course (Defibrillator)	October 2008	Onsite	GD First Aid Training Services	Mikael Serhil Rimantas Pukys Olegs Ptasinskis
Manual Handling	November 2008	Onsite	Jungheinrich	General Operatives

KMK management wish to confirm that environmental training programmes are carried out for selected staff every year and all training records and training procedures will be up-dated during the next working year.

12.0 OTHER ITEMS

There are no further items included in this Annual Environmental Report.

APPENDIX 1

Waste Received in 2008

Table 1: Total Amenity waste received in 2008 at KMK Metals Recycling Ltd.

Point of Collection	Description Of Waste	EWC Code	Qty Tonnes
Civic Amenity	Ferrous metal filings and turnings	12 01 01	0.998
Civic Amenity	Paper and cardboard packaging	15 01 03	0.100
Civic Amenity	Discarded equipment containing chlorofluorocarbons, HCFC, HFC	16 02 11*	2.015
Civic Amenity	Discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12	16 02 13*	1.526
Civic Amenity	Discarded equipment other than those mentioned in 16 02 09 to 16 02 13	16 02 14	2.704
Civic Amenity	Lead batteries	16 06 01*	171.797
Civic Amenity	Alkaline batteries (except 16 06 03)	16 06 04	18.552
Civic Amenity	Fluorescent tubes and other mercury-containing waste	20 01 21*	0.093
Civic Amenity	Discarded equipment containing chlorofluorocarbons	20 01 23*	1,212.582
Civic Amenity	Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	1,498.522
Civic Amenity	Discarded electrical and electric equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	20 01 36	6,148.308
TOTAL			**9,057.197**

Table 2: Total Commercial waste received in 2008 at KMK Metals Recycling Ltd.

Point of Collection	Description Of Waste	EWC Code	Qty Tonnes
Commercial	Ferrous metal filings and turnings	12 01 01	21.533
Commercial	Non-ferrous metal filings and turnings	12 01 03	15.919
Commercial	Plastic packaging	15 01 02	1.118
Commercial	Wood other than mentioned in 20 01 37	15 01 03	1.512
Commercial	Metallic packaging	15 01 04	19.622
Commercial	Discarded equipment containing chlorofluorocarbons, HCFC, HFC	16 02 11*	104.910
Commercial	Discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12	16 02 13*	131.149
Commercial	Smoke Detectors	16 02 13*	5.202
Commercial	Discarded equipment other than those mentioned in 16 02 09 to 16 02 13	16 02 14	210.575
Commercial		16 02 15*	0.495
Commercial	Components removed from discarded equipment other than those mentioned in 16 02 15	16 02 16	170.946
Commercial	Lead batteries	16 06 01*	75.837
Commercial	Alkaline batteries	16 06 04	3.650
Commercial	Other batteries and accumulators	16 06 05	0.204
Commercial	Fluorescent tubes and other mercury-containing waste	20 01 21*	1.739
Commercial	Discarded equipment containing chlorofluorocarbons	20 01 23*	1,019.047
Commercial	Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	381.015
Commercial	Discarded electrical and electric equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	20 01 36	4,348.633
TOTAL			**6,513.106**

Table 3: Total Industrial waste received in 2008 at KMK Metals Recycling Ltd.

Point of Collection	Description Of Waste	EWC Code	Qty Tonnes
Industrial	Waste containing other heavy metals	06 04 05*	1.688
Industrial	Wastes not otherwise specified	06 04 99	19.891
Industrial	Sludges from on-site effluent treatment containing dangerous solutions	06 05 02*	44.005
Industrial	Wastes not otherwise specified	06 13 99	19.448
Industrial	Ferrous metal filings and turnings	12 01 01	257.004
Industrial	Non-ferrous metal filings and turnings	12 01 03	42.578
Industrial	Non-ferrous metal dust and particles	12 01 04	59.640
Industrial	Welding wastes	12 01 13	10.455
Industrial	Waste blasting material other than those mentioned in 12 01 16	12 01 17	19.364
Industrial	Spent grinding bodies and grinding materials containing dangerous substances	12 01 20*	28.937
Industrial	Metallic packaging	15 01 04	0.110
Industrial	Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	15 02 03	2.468
Industrial	Discarded equipment containing chlorofluorocarbons, HCFC, HFC	16 02 11*	2.471
Industrial	Discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12	16 02 13*	49.032
Industrial	Discarded equipment other than those mentioned in 16 02 09 to 16 02 13	16 02 14	53.360
Industrial	Components removed from discarded equipment other than those mentioned in 16 02 15	16 02 16	275.330
Industrial	Lead batteries	16 06 01*	42.265
Industrial	Ni-Cd batteries	16 06 02*	0.617
Industrial	Alkaline batteries (except 16 06 03)	16 06 04	10.105
Industrial	Other batteries and accumulators	16 06 05	0.620
Industrial	Sludges from physico/chemical treatment containing dangerous substances	19 02 05*	21.530
Industrial	Fluorescent tubes and other mercury-containing waste	20 01 21*	0.542
TOTAL			**962.955**

Table 4: Total waste received at the Transfer Station in 2008 at KMK Metals Recycling Ltd.

Point of Collection	Description Of Waste	EWC Code	Qty Tonnes
Transfer Station	Ferrous metal filings and turnings	12 01 01	227.433
Transfer Station	Non-ferrous metal filings and turnings	12 01 03	6.944
Transfer Station	Plastic packaging	15 01 02	1.145
Transfer Station	Wooden packaging	15 01 03	1.427
Transfer Station	Discarded electrical equipment containing chlorofluorocarbons, HCFC, HFC	16 02 11*	9.415
Transfer Station	Discarded electrical equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12	16 02 13*	60.946
Transfer Station	Discarded equipment other than those mentioned in 16 02 09 to 16 02 13	16 02 14	140.558
Transfer Station	Components removed from discarded equipment other than those mentioned in 16 02 15	16 02 16	371.687
Transfer Station	Lead batteries	16 06 01*	467.261
Transfer Station	Alkaline Batteries (except 16 06 03)	16 06 04	9.310
Transfer Station	Fluorescent tubes and other mercury-containing waste	20 01 21*	1.726
Transfer Station	Discarded equipment containing chlorofluorocarbons	20 01 23*	251.342
Transfer Station	Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	222.441
Transfer Station	Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35	20 01 36	673.048
TOTAL			**2,444.683**

APPENDIX 2

Waste Despatched in 2008

Table 1: Waste despatched in 2008 at KMK Metals Recycling Ltd.

Description Of Waste	EWC Code	Qty Tonnes
Wastes containing other heavy metals	06 04 05*	1.688
Wastes not otherwise specified	06 04 99	10.629
Sludges from on-site effluent treatment containing dangerous solutions	06 05 02*	44.005
Wastes not otherwise specified	06 13 99	16.295
Ferrous metal filings and turnings	12 01 01	506.294
Non-ferrous metal filings and turnings	12 01 03	33.122
Non-ferrous metal dust and particles	12 01 04	46.947
Welding wastes	12 01 13	8.15
Waste blasting material other than those mentioned in 12 01 14	12 01 17	19.364
Spent grinding bodies and grinding materials containing dangerous substances	12 01 20*	28.937
Paper and cardboard packaging	15 01 02	2.263
Plastic packaging	15 01 03	3.039
Metallic packaging	15 01 04	15.298
Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	15 02 03	2.038
Discarded equipment containing chloroflourocarbons, HCFC, HFC	16 02 11*	111.611
Discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12	16 02 13*	228.325
Discarded equipment other than those mentioned in 16 02 09 to 16 02 13	16 02 14	213.739
Components removed from discarded equipment other than those mentioned in 16 02 15	16 02 16	613.620
Lead batteries	16 06 01*	720.260
Ni-Cd batteries	16 06 02*	0.617
Alkaline batteries	16 06 04	5.728
Other batteries and accumulators	16 06 05	0.824
Sludges from physico/chemical treatment containing dangerous substances	19 02 05*	21.530
Fluorescent tubes and other mercury-containing waste	20 01 21*	2.911
Discarded equipment containing chlorofluorocarbons	20 01 23*	2,482.971
Discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	20 01 35*	2,101.978
Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35.	20 01 36	11,169.989
TOTAL		**18,412.17**

APPENDIX 3

Waste in Stock in 2008

Table 1: Waste in stock during 2008 at KMK Metal Recycling Ltd.

Description Of Waste	EWC Code	Qty Tonnes
Wastes not otherwise specified	06 04 99	9.262
Wastes not otherwise specified	06 13 99	3.153
Photographic film and paper containing silver or silver compounds (Old Stock)	09 01 07	0.255
Sludges and filter cakes containing dangerous substances (Old Stock)	11 01 09*	2.454
Ferrous metal filings and turnings	12 01 01	0.674
Non-ferrous metal filings and turnings	12 01 03	32.319
Non-ferrous metal dust and particles	12 01 04	12.693
Welding wastes	12 01 13	2.305
Spent grinding bodies and grinding materials other than those mentioned in 12 01 20 (Old Stock)	12 01 21	1.643
Other engine, gear and lubricating oils (Old Stock)	13 02 08*	3.293
Wastes not otherwise specified (Old Stock)	13 08 99	0.233
Metallic packaging	15 01 04	4.434
Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	15 02 03	0.430
Discarded equipment containing chloroflourocarbons, HCFC, HFC	16 02 11*	7.200
Discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12	16 02 13*	19.530
Discarded equipment other than those mentioned in 16 02 09 to 16 02 13 (phones)	16 02 14	193.458
Hazardous components removed from discarded equipment (capacitors, breakdown from washing machines also) Old Stock	16 02 15*	2.308
Components removed from discarded equipment other than those mentioned in 16 02 15	16 02 16	204.343
Lead batteries	16 06 01*	38.395
Fluorescent tubes and other mercury-containing waste	20 01 21*	1.189
Batteries and accumulators included in 16 06 01, 16 06 02 or 16 06 03 and unsorted batteries and accumulators containing these batteries	20 01 33*	35.889
TOTAL		**575.46**

APPENDIX 4

Dust Monitoring Report

SEE ATTACHED FILE

Dust Report

for

KMK METALS RECYCLING LTD.

WASTE LICENCE REF: W0113-03

CAPPINCUR INDUSTRIAL ESTATE, DAINGEAN ROAD, TULLAMORE, CO. OFFALY

September 2008

Printed on
Recycled Paper

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1.0 INTRODUCTION

ENVIROCO Management has been commissioned by Ms Charlotte Walker of KMK Metals Recycling Ltd, Cappincur Industrial Estate, Tullamore, Co Offaly to conduct the annual dust monitoring event at the facility.

The KMK LTD facility is located in the Cappincur Industrial Estate towards the east of Tullamore town, off the L-02025 road to Daingean – figure 1.0.1.

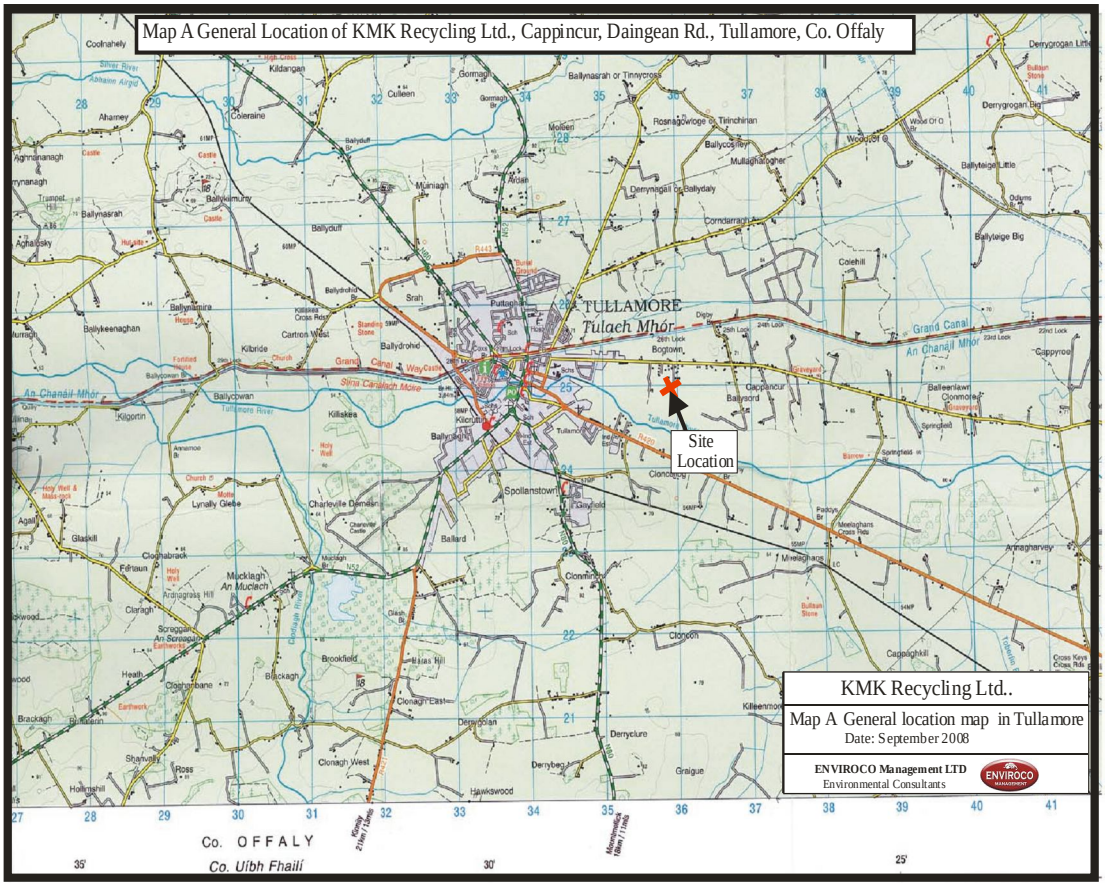

Figure 1.0.1 Site Location map of the KMK Facility, Tullamore, Co. Offaly

1.1 ENVIRONMENTAL MONITORING

ENVIROCO Management was commissioned by Ms Charlotte Walker of KMK Metals Recycling Ltd, Cappincur Industrial Estate, Tullamore, Co Offaly to carry out the annual environmental dust monitoring. Monitoring occurred from the 9th August to the 8th September 2008 during normal activity at the facility.

2.0 METHODOLOGY

The Cappincur site was visited by ENVIROCO Management Ltd on the 9th August 2008. The approved dust monitoring map (Map I.1.1 below) as submitted to the EPA for the waste licence review ref: W0113-03 was used to identify the locations for the 6 monitoring stations to give an accurate representation of the site.

Dust deposition monitoring was based on a modified version of the Bergerhoff method VID 2119 'Measurement of dustfall using the Bergerhoff instrument (standard method).

The dust monitors were left in-situ for 30 days from the 9th August to the 8th September 2008. Figure 2.0.1 shows the location of each of the stations. These are described in table 2.0.1 below.

Table 2.0.1 Location of Dust Monitoring Stations at Cappincur site, Co. Offaly

Station I.D.	**Location Description**	**Irish Grid Reference**	
		Easting	**Northing**
A2-1	Car Park at Fence Boundary	235950	225048
A2-2	Eastern boundary, beside disused portacabin	235957	225007
A2-3	Fence at southwest boundary	235890	224958
A2-4	Site Entrance	235922	225006
A2-5	Western Boundary	235876	225014
A2-6	Northern Boundary	235911	225012

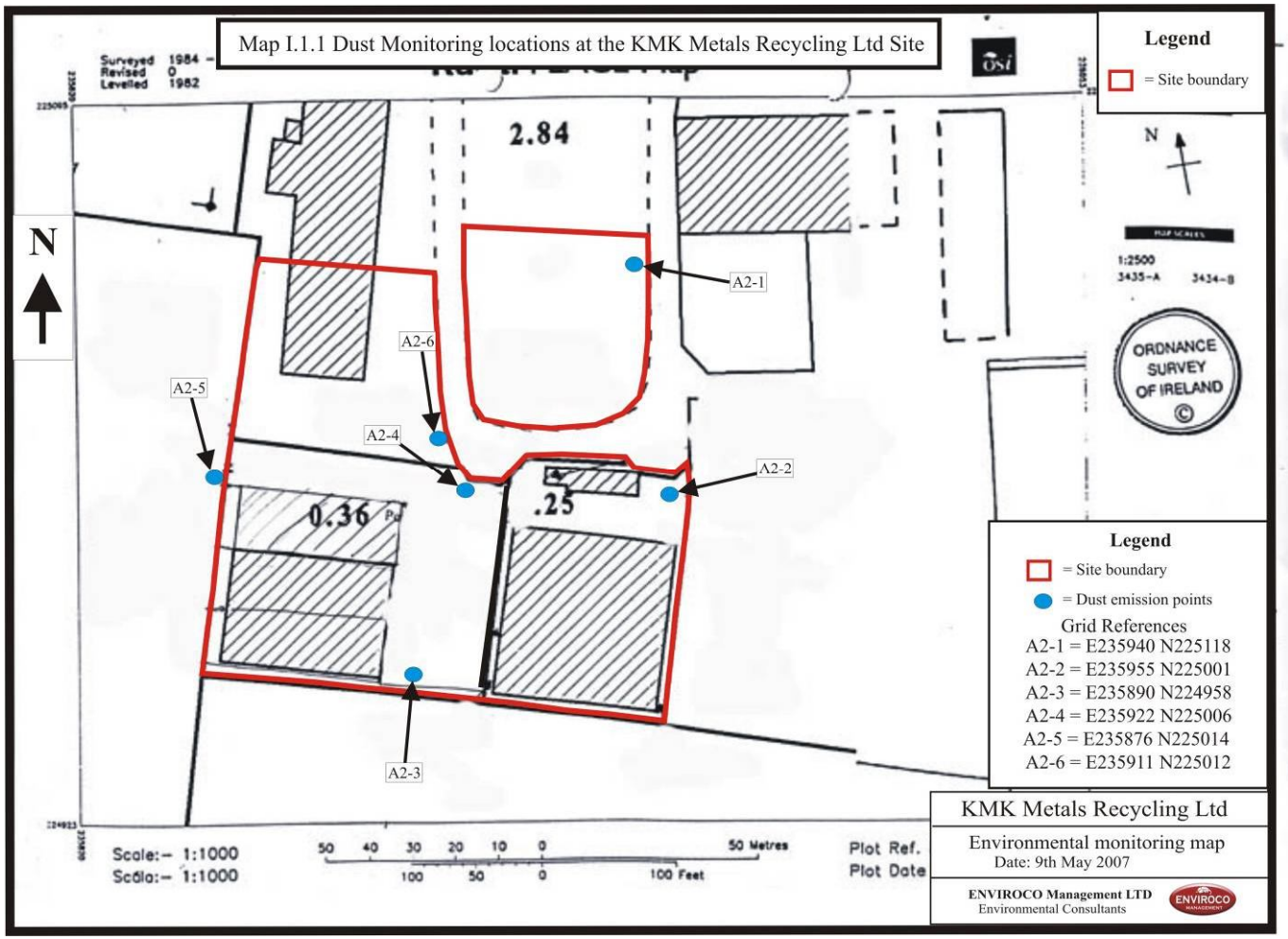

Figure 2.0.1 Dust Monitoring Stations at Cappincur site, Tullamore, Co. Offaly

2.1 PROBLEMS ENCOUNTERED

The following dust monitoring locations were changed as follows:

- Station A2-5 – the dust monitor was placed on the outside of the western boundary instead of the inside location due to the temporary presence a metal baler unit.
- Station A2-6 – this position was changed from the northern boundary to just inside the entrance to the D4 area due to the presence of WEEE materials.

3.0 RESULTS

After 30 days of monitoring, each of the dust stations was disassembled and the samples were sent to an Accredited Laboratory for analysis (Complete Laboratory Solutions). The Certificate of Analysis is attached in Appendix A.

The results from the monitoring are shown in table 3.0.1, 3.0.2 and figure 3.0.1 below. These levels are compared to the EPA guidance limit for nuisance dust.

Table 3.0.1 Results of total dust monitoring at the site.

Station I.D.	**Monitoring Location**	**Irish Grid Ref.**		**Dust Deposition** (Aug/Sep 2008) **mg/m^2/day**	**EPA licence Limits mg/m^2/day**
		Easting	**Northing**		
A2-1	Car Park at Fence Boundary	235950	225048	280	350
A2-2	Eastern boundary, beside disused portacabin	235957	225007	338	350
A2-3	Fence at southern boundary	235922	225006	**580**	350
A2-4	Site Entrance	235890	224958	**1012**	350
A2-5	Western Boundary	235876	225014	**1084**	350
A2-6	Northern Boundary	235911	225012	**902**	350

Table 3.0.2 Results of metallic species in dust at the site.

Parameters	Metallic analysis in dust (ug/l)					
	A2-1	**A2-2**	**A2-3**	**A2-4**	**A2-5**	**A2-6**
Aluminium (Al)	<20	<20	<20	<20	<20	128
Copper (Cu)	<1	<1	<1	<1	<1	12
Arsenic (As)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Cadmium (Cd)	<0.5	<0.5	<0.5	<0.5	<0.5	0.9
Chromium (Cr)	<0.5	<0.5	<0.5	<0.5	<0.5	0.6
Iron (Fe)	<10	<10	<10	<10	<10	173
Mercury (Hg)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel (Ni)	<0.5	<0.5	<0.5	<0.5	<0.5	2
Lead (Pb)	<0.5	<0.5	<0.5	<0.5	<0.5	31
Zinc (Zn)	<5	<5	<5	<5	<5	165

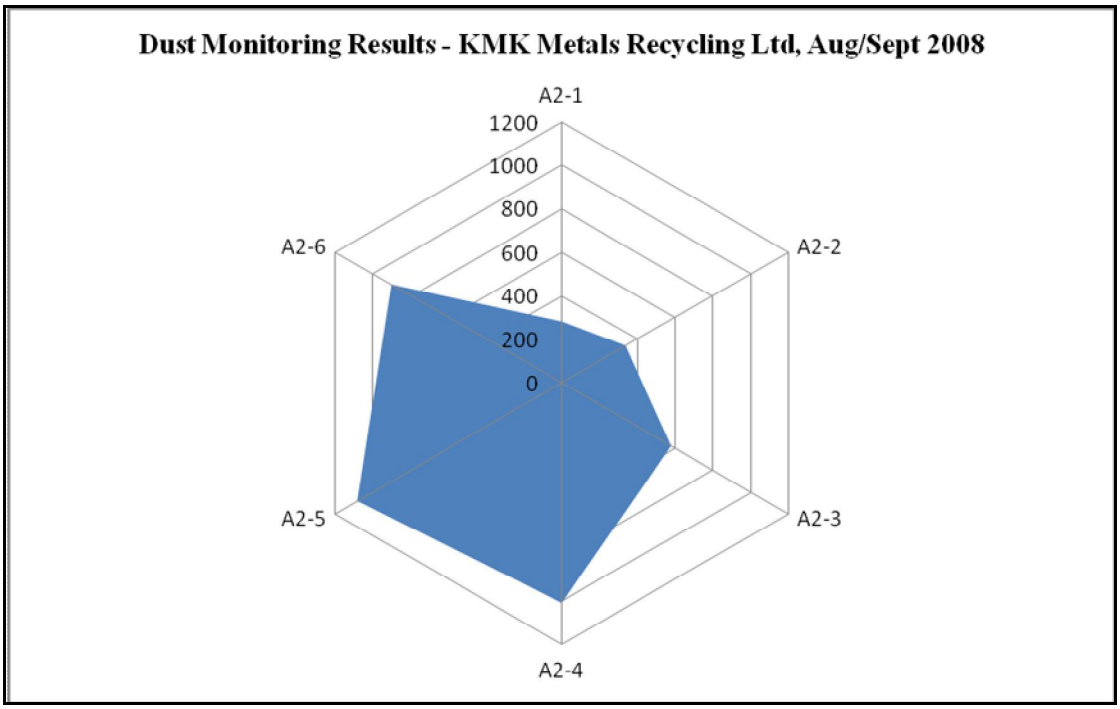

Figure 3.0.1 Distribution of the results from dust monitoring August/September 2008.

Weather conditions can have a noticeable impact upon dust creation and dust entrainment in the air. Drier weather will increase the ambient dust on the ground and will lighten small particulates. Wind strength will determine the size of particles that can be entrained in the air and the distance they will be transported. The Met Eireann data from the Birr Synoptic Station.

Table 3.0.3 Monthly values for Birr Synoptic Station 2008

Parameter	August	September
Total Rainfall (mm)	181.7	84.1
Mean Temperature (˚C)	15.4	12.3
Mean wind Speeds (Knots) *	7.4	6.9

*Mean Wind Speeds are for Ireland

4.0 DISCUSSION

Dust monitoring around the boundaries of the KMK Metals Recycling Ltd, Cappincur site show results which range below and above the EPA Recommendation limit of 350mg/m^2/day.

The highest value recorded was from a dust station located on the Western boundary of the site, at 1084 mg/m^2/day (A2-5). However, this can be explained by fact that the actual monitor location was beneath conifer trees along that boundary. This location was decided as the nearest point to the boundary as the metal baler was taking up space at the usual location. The presence of the conifer trees resulted in some pine needles falling into the sample bottle and therefore adding to the overall soiling rate in the sample.

Stations A2-4 and A2-6 accounted for the next highest dust levels at the site (1012 and 902 mg/m^2/day) respectively. These monitors were positioned at entrances to the busiest parts of the site and at areas where vehicles enter/exit and turn regularly. The elevated levels of dust at these locations are most likely due to the close proximity of vehicles on the public road passing by and traffic also accessing and exiting the site.

Station A2-3 recoded a dust level of 580 mg/m^2/day which was elevated and is quite unusual at this location considering the lack of activity here in relation to waste handling and no vehicle movements either. The new building/roof structure (DX) is located north of this dust location and therefore acts as a shield from activities in the D areas. One can only assume a high background dust level here as there were no waste activities occurring at this location. Similar to the location at A2-5 there may have been some plant/hedging particles entering this monitor and therefore resulted in elevated dust levels.

Station A2-2 recorded a dust level of 338 mg/m^2/day which was just below the EPA limits of 350 mg/m^2/day. This location is just inside the entrance and is obviously heavily influenced by vehicle traffic entering and existing at this location.

Station A2-1 recorded a dust level of 280 mg/m^2/day which at the new carpark area of the site along the east boundary. This location was not influenced by site activities or trees and hedging. The level of dust measured suggests a relatively high background concentration of particulates in the industrial estate and this location was probably influenced by passing traffic in the industrial estate and windblown dust from the immediate hardstanding surfaces.

An analysis of the metallic species in all 6 dust samples was also carried out. All samples measured were below the actual laboratory limits of detection with the exception of A2-6 for the following metallic species; aluminium (128ug/l), copper (12ug/l), cadmium (0.9ug/l), chromium (0.6ug/l), iron (173ug/l), zinc (165ug/l), lead (31ug/l) and nickel (2ug/l). This dust monitoring location was located at a very active area of the site in relation to vehicular entry/exiting the D4 area. Whilst metallic species were measured, the actual concentrations are not significant. There is no EPA limit set in the licence for metallic species.

5.0 CONCLUSIONS

Monitoring of dust deposition occurred at six stations around the site between the 9th August and 8th September 2008. Stations were left in situ for 30 days. Some of the stations resulted dust deposition results greater than the EPA limit of 350 mg/m^2/day, the reasons for which have been addressed in this report. An analysis of metals in the dust samples showed no detection in 5 samples and minor detection in 1 sample, which was largely due to loading and unloading of trucks in this locality.

6.0 RECOMMENDATIONS

- During dry weather conditions it is advised to dampen down the immediate areas around the site entrances with water (use hose reel to spray dusty areas).

APPENDIX A

Certificate of Analysis

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] info@cls.ie
[web] www.completelabsolutions.com

Client	:	Eamon Lee / Eimear Gormally	Report No.	: 80474
		Enviroco Management Ltd.	Date of Receipt	: 09/09/2008
		Bow House, O'Moore Street,	Start Date of Analysis	: 09/09/2008
		Tullamore	Date of Report	: 18/09/2008
		Co. Offaly	Order Number	:
			Sample taken by	: Client

CERTIFICATE OF ANALYSIS

Results

Lab No	Sample Description	Test	Result	Units
183750	Dust jar. KMK DS 001. 8/9/08	Copper, total	<1	ug/l
		Iron, total	<10	ug/l
		Settleable Dust (Bergerhoff Method)	280	mg/sq.M/Day
		Arsenic, total	<0.5	ug/l
		Zinc, total	<5	ug/l
		Chromium, total	<0.5	ug/l
		Nickel, total	<0.5	ug/l
		Aluminium, total	<20	ug/l
		Lead, total	<0.5	ug/l
		Cadmium, total	<0.5	ug/l
		Mercury	<0.05	ug/l

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NOS. 108T AND 109T

Authorised by: Kieran Cunningham
Kieran Cunningham
Analytical Chemist

See reverse for Test Specifications

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] info@cls.ie
[web] www.completelabsolutions.com

Client	:	Eamon Lee / Eimear Gormally	Report No.	: 80477
		Enviroco Management Ltd.	Date of Receipt	: 09/09/2008
		Bow House, O'Moore Street,	Start Date of Analysis	: 09/09/2008
		Tullamore	Date of Report	: 18/09/2008
		Co. Offaly	Order Number	:
			Sample taken by	: Client

CERTIFICATE OF ANALYSIS

Results

Lab No	Sample Description	Test	Result	Units
183751	Dust jar. KMK DS 002. 8/9/08	Copper, total	<1	ug/l
		Iron, total	<10	ug/l
		Settleable Dust (Bergerhoff Method)	338	mg/sq.M/Day
		Arsenic, total	<0.5	ug/l
		Zinc, total	<5	ug/l
		Chromium, total	<0.5	ug/l
		Nickel, total	<0.5	ug/l
		Aluminium, total	<20	ug/l
		Lead, total	<0.5	ug/l
		Cadmium, total	<0.5	ug/l
		Mercury	<0.05	ug/l

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NOs. 109T AND 109T

Authorised by: Kieran Cunningham
Kieran Cunningham
Analytical Chemist

See reverse for Test Specifications

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] info@cls.ie
[web] www.completelabsolutions.com

Client	:	Eamon Lee / Eimear Gormally	Report No.	: 80476
		Enviroco Management Ltd.	Date of Receipt	: 09/09/2008
		Bow House, O'Moore Street,	Start Date of Analysis	: 09/09/2008
		Tullamore	Date of Report	: 18/09/2008
		Co. Offaly	Order Number	:
			Sample taken by	: Client

CERTIFICATE OF ANALYSIS

Results

Lab No	Sample Description	Test	Result	Units
183752	Dust jar. KMK DS 003. 8/9/08	Copper, total	<1	ug/l
		Iron, total	<10	ug/l
		Settleable Dust (Bergerhoff Method)	1012. Heavy brown dust	mg/sq.M/Day
		Arsenic, total	<0.5	ug/l
		Zinc, total	<5	ug/l
		Chromium, total	<0.5	ug/l
		Nickel, total	<0.5	ug/l
		Aluminium, total	<20	ug/l
		Lead, total	<0.5	ug/l
		Cadmium, total	<0.5	ug/l
		Mercury	<0.05	ug/l

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NOs. 109T AND 109T

Authorised by: Kieran Cunningham

Kieran Cunningham
Analytical Chemist

See reverse for Test Specifications

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] info@cls.ie
[web] www.completelabsolutions.com

Client	:	Eamon Lee / Eimear Gormally	Report No.	: 80478
		Enviroco Management Ltd.	Date of Receipt	: 09/09/2008
		Bow House, O'Moore Street,	Start Date of Analysis	: 09/09/2008
		Tullamore	Date of Report	: 18/09/2008
		Co. Offaly	Order Number	:
			Sample taken by	: Client

CERTIFICATE OF ANALYSIS

Results

Lab No	Sample Description	Test	Result	Units
183753	Dust jar. KMK DS 004. 8/9/08	Copper, total	<1	ug/l
		Iron, total	<10	ug/l
		Settleable Dust (Bergerhoff Method)	580. Dusty	mg/sq.M/Day
		Arsenic, total	<0.5	ug/l
		Zinc, total	<5	ug/l
		Chromium, total	<0.5	ug/l
		Nickel, total	<0.5	ug/l
		Aluminium, total	<20	ug/l
		Lead, total	<0.5	ug/l
		Cadmium, total	<0.5	ug/l
		Mercury	<0.05	ug/l

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NOS. 109T AND 109T

Authorised by: Kieran Cunningham

Kieran Cunningham
Analytical Chemist

See reverse for Test Specifications

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] info@cls.ie
[web] www.completelabsolutions.com

Client	:	Eamon Lee / Eimear Gormally	Report No.	: 80479
		Enviroco Management Ltd.	Date of Receipt	: 09/09/2008
		Bow House, O'Moore Street,	Start Date of Analysis	: 09/09/2008
		Tullamore	Date of Report	: 18/09/2008
		Co. Offaly	Order Number	:
			Sample taken by	: Client

CERTIFICATE OF ANALYSIS

Results

Lab No	Sample Description	Test	Result	Units
183754	Dust jar. KMK DS 005. 8/9/08	Copper, total	<1	ug/l
		Iron, total	<10	ug/l
		Settleable Dust (Bergerhoff Method)	1084. Heavy black dust	mg/sq.M/Day
		Arsenic, total	<0.5	ug/l
		Zinc, total	<5	ug/l
		Chromium, total	<0.5	ug/l
		Nickel, total	<0.5	ug/l
		Aluminium, total	<20	ug/l
		Lead, total	<0.5	ug/l
		Cadmium, total	<0.5	ug/l
		Mercury	<0.05	ug/l

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NOS. 109T AND 109T

Authorised by: Kieran Cunningham

Kieran Cunningham
Analytical Chemist

See reverse for Test Specifications
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Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] info@cls.ie
[web] www.completelabsolutions.com

Client	: Eamon Lee / Eimear Gormally	Report No.	:	80480
	Enviroco Management Ltd.	Date of Receipt	:	09/09/2008
	Bow House, O'Moore Street,	Start Date of Analysis	:	09/09/2008
	Tullamore	Date of Report	:	29/09/2008
	Co. Offaly	Order Number	:	
		Sample taken by	:	Client

CERTIFICATE OF ANALYSIS

Results

Lab No	Sample Description	Test	Result	Units
183755	Dust jar. KMK DS 006. 8/9/08	Copper, total	12	ug/l
		Iron, total	173	ug/l
		Settleable Dust (Bergerhoff Method)	902. very heavy black dust	mg/sq.M/Day
		Arsenic, total	<0.5	ug/l
		Zinc, total	165	ug/l
		Chromium, total	0.6	ug/l
		Nickel, total	2	ug/l
		Aluminium, total	128	ug/l
		Lead, total	31	ug/l
		Cadmium, total	0.9	ug/l
		Mercury	<0.05	ug/l

ISO 17025 INAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 100T

Authorised by: Kieran Cunningham
Kieran Cunningham
Analytical Chemist

See reverse for Test Specifications
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APPENDIX 5

Noise Monitoring Report

SEE ATTACHED FILES

Noise Report for

KMK METALS RECYCLING LTD.

CAPPINCUR INDUSTRIAL ESTATE, DAINGEAN ROAD, TULLAMORE, CO. OFFALY

August 2008

Printed on
Recycled Paper

Table of Contents

Appendices

Appendix A Noise Results & Charts

List of Tables:

List of Figures:

1.0 Introduction

ENVIROCO Management has been commissioned by Mr. Kurt Kyck of KMK Metal Recycling LTD, Cappincur Industrial Estate, Tullamore, Co Offaly; Waste Licence Number W0113-03 to submit an environmental noise survey as required by the facilities licence conditions

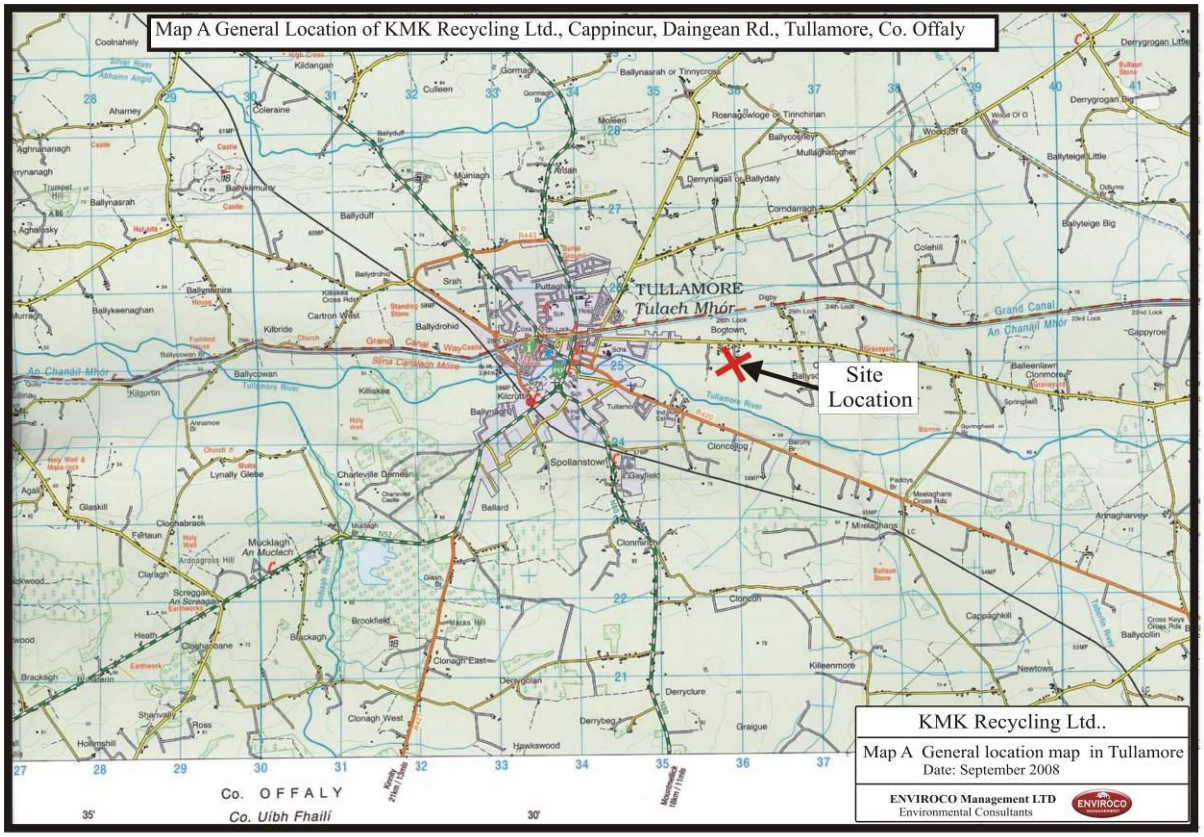


Figure 1.0.1 Site Location map of the KMK Facility, Tullamore, Co. Offaly

The KMK LTD facility is located in the Cappincur Industrial Estate towards the east of Tullamore town, off the L02025 road to Daingean – figure 1.0.1. The Cappincur Industrial Estate is dominated by enclosed industrial units, with little mobile machinery operating outside of these units.

This primary objective of the environmental noise survey was to provide:

- An assessment of the noise emissions arising from the facility

1.1 Environmental Monitoring

ENVIROCO Management was commissioned by KMK Metals Recycling LTD, Cappincur Industrial Estate, Tullamore, Co Offaly to carry out environmental noise monitoring.

Monitoring occurred on the 8th August 2008. Monitoring took place during normal activity at the facility.

2.0 Noise Survey

Noise has many sources, both manmade and environmental. Noise is observer defined, as levels unacceptable to one person may be perceived as necessary or enjoyable to another. As such the monitoring of noise is primarily an observational discipline requiring a full identification of the sources of possible noise and the type of sound that is been emitted (continuous, intermittent, tonal, broad-spectrum, single source, multiple source). The Environmental Protection Agency (EPA) has adopted a noise level (as a continuous equivalent noise reading – Leq) of 55 dB(A) as an indicator of annoyance due to noise arising from industrial activity. This level is given at the receptor or noise sensitive location (NSL). Monitoring of noise at the KMK plc facility in the Cappincur Industrial Estate, Tullamore, took into account both the nature of the site, the history of the site, the intensity of the operations and the proximity of local sensitive receivers. Monitoring was carried out mid-week during the hours of 9am to 3 pm; the facility does not operate during night-time therefore readings after 7pm were not recorded.

2.1 Methodology

Noise monitoring was carried out to the International Standard ISO 1996/1 "Acoustics – Description & measurement of environmental noise", using a Bruel Kjaer 2250 Sound Level Meter with outdoor equipment that was fully calibrated prior to the monitoring event.

Noise monitoring was carried out on the 8th August 2008. The KMK facility in the Cappincur Industrial Estate does not operate over night; therefore noise monitoring was not carried out overnight. Each monitoring location is identified on the map shown in figure 2.1.1.

Weather conditions during sampling were; bright and sunny with a light breeze becoming overcast as the morning passed.

Table 2.1.1 Met Eireann Report

REPORTS FROM BIRR WEATHER STATION						
Date	**Rainfall (mm)**	**Max Temp**	**Min Temp**	**Sunshine (hours)**	**Gusts**	**Wind speed**
08/08/2008	0.0	18.7	7.6	5.4	0	4.2

The monitoring equipment was manned throughout the sampling period and comments/notes taken to assist the interpretation and assessment of results.

Sampling was carried out at 6 locations along the facilities boundaries where accessible (Figure 2.1.1). ENVIROCO Management staff selected these monitoring locations in accordance with Schedule C Control and Monitoring of KMK's waste licence conditions.

The monitoring locations were:

N1: Car park at fence boundary
N2: Eastern boundary, beside disused portacabin
N3: Fence at southwest boundary
N4: Western boundary
N5: North-western boundary @ washing machine processing area.
N6: Northern boundary at fridge storage area

Table 2.1.2 Grid Reference Points of Noise Monitoring Positions

Monitoring Locations	**Grid Reference (ING)**	
	Easting	**Northing**
N1	235946	225050
N2	235951	225017
N3	235858	224964
N4	235876	225014
N5	235869	225036
N6	235904	225031

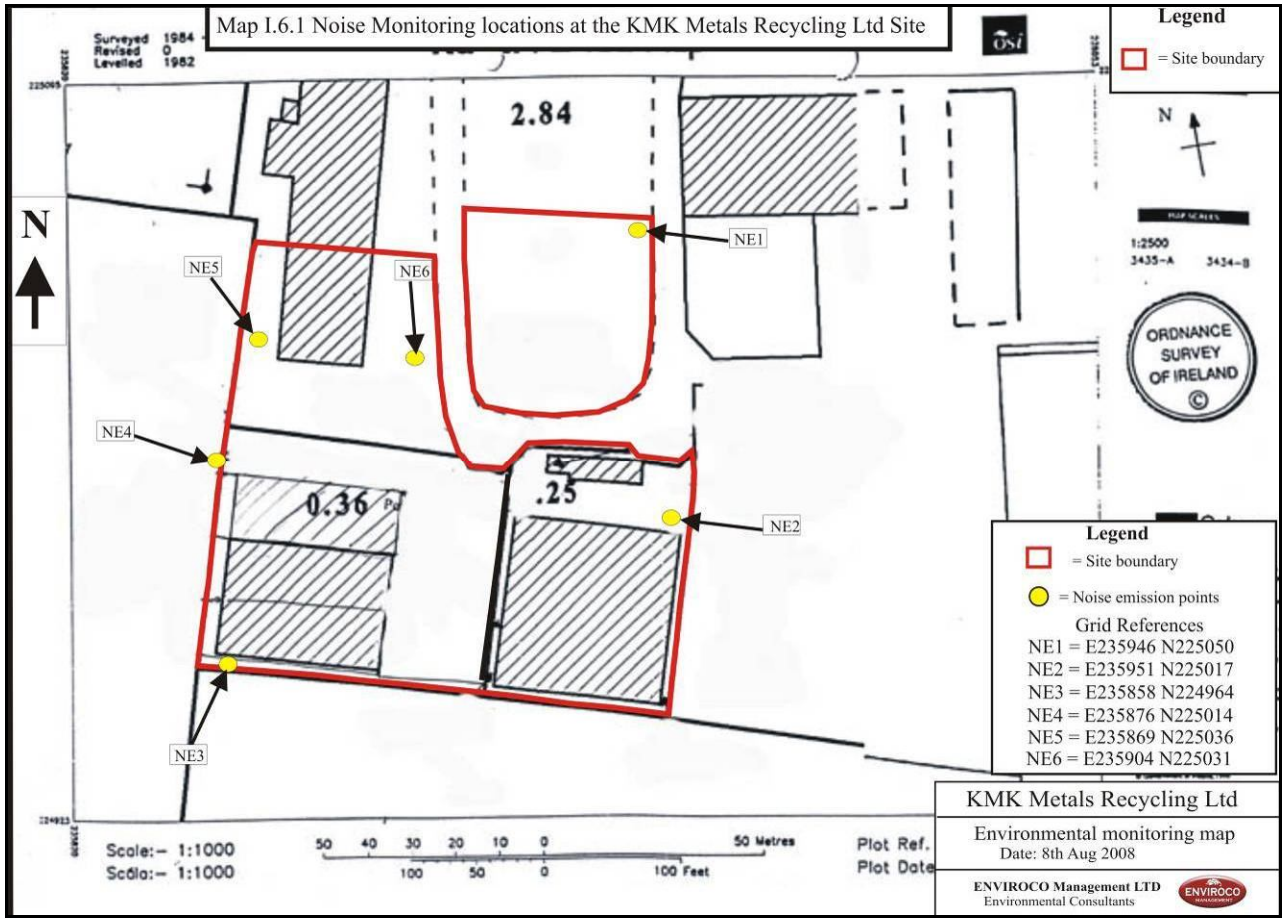


Figure 2.1.1 Noise Monitoring Locations at KMK Metal Recycling Ltd on the 8th August 2008.

2.2 Results

The complete set of noise measurement results is included in Appendix A. These are summarised and discussed below.

Table 2.2.1 Summary of Site Boundary Noise Levels

Location	Start Time	L_{Aeq} (2006)	Comments
N1 Car park at fence boundary	10:01	58	Car exiting the site. Truck idling in background @site. Truck arriving at site for loading. Noise coming from baler within the site. Lorry passing site. Birdsong. Car entering car park. People talking on and off site. Noise from surrounding units and traffic passing into them. Truck blowing horn and engine left idling near noise meter. Sound of metal hammering and poles falling.
N2 Eastern boundary, beside disused portacabin	10:36	63	Birdsong. Engines idling. Doors banging on trucks. Hand trolley moving items into buildings. Forklifts operating and reverse alarms sounding. Forklifts in c&c area collecting boxes. Truck blowing horn when exiting site @ 10:47. Sound of items being unloaded from truck. Forklift engine idling close to the noise meter while waiting for the main gate to open. Jeep and trailer being loaded close to the noise meter. Loading trailer dropping its sides close to the noise meter.
N3 Fence at southwest boundary	11:17	63	Birdsong. A lot of noise from the processing area D. Television dismantling. Water trickling in nearby drain. Radio running in process area D. Reverse alarm sirens on forklifts. Sound of horn blowing in the process area. Movement of parts, air-tools operating. Radio volume increased. Machinery being used. Horn sounding twice @ 11:37.

Table 2.2.1 Summary of Site Boundary Noise Locations (contd.)

Location	Start Time	L_{Aeq} (2006)	Comments
N4 Western boundary	14:31	63	Sweeping taking place beside the baler. Noise from process area barely audible. Birdsong. Wind rustling leaves in trees. Noise from neighbouring industrial estate. 14:33 noise as baler starts again. Truck entering the D area. Forklifts in operation. Noise of baler operating for the rest of the monitoring period. 14:50 fork lift loading a truck with sound of glass breaking.
N5 North-western boundary @ washing machine processing area.	11:59	59	Dogs barking in the distance. Birdsong. Forklifts operating in D4 area. Baler engine idling near the D4 area. Banging from the process areas, movement of items around the yard. Truck being loaded. Crushing of products. Items being dragged by forklift @ 12:17. Reverse alarms. Baler being loaded @ 12:24. Items falling off forklifts. Truck horn sounding.
N6 Northern boundary at fridge storage area	12:33	72	A truck being unloaded by forklift @D4 yard. Fork trucks operating, reversing alarms and scraping noises during unloading. 12:37 truck passes noise meter. 12:48 noise meter moved to allow fork truck unload a lorry of freezers. Increased noise during unloading due to reversing alarms and revving of engines during unloading. Scraping of pallets along the yard floor by fork trucks. Freezers being loaded by hand, compartments from within falling out on to the yard floor.

2.3 Discussion

There are currently no statutory limits for the control of environmental noise in Ireland. However, the EPA has issued a guidance note on noise emissions that states, '*Ideally, if the total noise level from all sources is taken into account, the noise level* ***at sensitive locations*** *should be kept below an L_{Aeq} value of 55dB(A) by daytime. At night, to avoid disturbance, the noise level at noise sensitive locations should not exceed a $L_{Aeq\ T}$ value of 45dB(A).'*

Noise monitoring was carried out between the hours of 9am and 3 pm. Noise monitoring was not carried out overnight as the facility does not operate outside of normal hours. Noise sources from the plant, audible at the site boundaries have been identified as:

- Vehicles entering/leaving the site
- Personnel entering/leaving buildings
- Unloading of trucks
- The movement of trolleys and fork lift trucks in the process areas
- Reversing alarms from fork trucks

The Tullamore KMK facility is located within the Cappincur Industrial Estate. This industrial estate includes warehousing operations and environments, with Palace Kitchens, Modified Motors and Robedesign, all located within a relatively close proximity to the KMK plant. All warehousing environments require controlled ventilation and air supply, and the noise associated with these fans, and other ancillary activities, outside of the primary plant building all increased noise levels within the industrial park.

The greatest ascendance in noise levels occurred at station N6 in the north of the site with a L_{Aeq} reading of 72 db (A). Contributing factors to this high L_{Aeq} value included a high L_{10} recording. The L_{10} noise parameter represents the noise level associated with the peak 10% of noise recorded over the monitoring period, typically associated with traffic noise and other loud, short duration noises. The L_{10} value at station N6 was 77 dB (A) and well above the L_{10} reading at its nearest station N1 of 62 dB (A) which was the lowest L_{10} value recorded. The main sources of noise at station N6 emanated from site operations involving the unloading of a truck of fridges and freezers with the aid of a fork-lift. These operations resulted in the sounding of the reverse alarm, scraping of metal surfaces as well as falling material from the back of the truck.

The difference between the L_{10} reading at station N1 and N6 suggests that much of the noise experienced at N6 in the north of the site is not likely to be of nuisance to neighbouring properties as it does not travel very far.

N1 located in the north east of the site experienced the lowest L_{Aeq} reading of 58 db (A) but still slightly exceeded the EPA limit of 55 dB (A). Much of this noise was created from sources outside the boundaries of the site such as passing traffic; also a truck left idling near the noise meter which relates to the elevated L_{90} reading of 52 db (A). Noise stations N2, N3 and N4 located in the East, South and West of the site experienced similar L_{Aeq} values of 63-64 dB (A). Much of this noise was due to operations within the facility directly related to the unloading and dismantling of

waste electrical products. Each of these stations displayed similar elevated L_{10} readings of 66-67 dB (A) which corresponds with the noise created from these activities. This noise is not likely to be a source of disturbance to neighbouring properties as noise is known to dissipate over distance, see table 2.3.1 below.

Table 2.3.1 Attenuation of Noise over Distance

Distance m	Noise level dB
10	70
20	64
40	58
80	52
160	46

Station N5 situated on the western boundary of the site gave a L_{Aeq} value of 59 dB (A) which slightly exceeds the EPA limit of 55 Bb (A). Some of the noise at this station originated from external site sources such as dogs barking and vehicle horns sounding in the distance, these correspond with the elevated L_{10} value of 63 dB (A).

Overall, the noise levels recorded at Stations N1, N2, N3, N4, N5 and N6 during monitoring at KMK Metals Recycling Ltd all exceeded the Daytime Noise Limit Value L_{Aeq} (30 minutes) of 55dB (A) which is stipulated in Schedule B table B4 of the companies Waste Licence conditions.

3.0 Octave Band Analysis and Discussion

Octave band analysis of noise is the breakdown of the sound pressure readings, as recorded on site, into specific frequency band widths. This enables a greater understanding of the type of noise evident at a site and can give indications to where tonal noise is present. There are two common forms of octave analysis. Full octave analysis groups sound pressure readings into frequency readings that cover a full octave. This type of monitoring gives a good general description of how people will perceive a sound/noise. One third octave analysis, further separates the noise reading into $^{1}/_{3}$ octave frequency groupings. Each frequency reading is given in Hz. The frequency reading is the central frequency for each band that is been monitored (i.e. Frequency band 250 Hz covers all sound pressure readings recorded between 167Hz to 333Hz).

3.1 Octave Analysis

The scope of this noise assessment is to evaluate the noise arising from the KMK Metals Recycling Ltd facility within the Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly. Full results of the 1/3 octave analysis are shown in Appendix A, including charted results for each station. These results and charts are discussed below. The overview chart of all monitoring stations shows a similar trend at most stations, with a general decline in sound pressure as frequency increase. 5 peaks are evident in the overview chart, these are located at, 0, 0, and Hz.

The octave analysis chart for the sound pressure recorded at KMK Metals Recycling Ltd facility on 08-08-08 shows a general trend for all monitoring locations. At low frequencies the sound pressure is under 20 dB(A), this jumps at 31.5Hz to sound pressure readings of 20-30 dB(A). A steady increase in sound pressure readings is noted with each increase in frequency bandwidth till a peak occurs in the 400–3.15KHz bandwidth, after which a slow but steady decrease in sound pressure readings are noted. This charts highlights that primary noise arising at the sites boundary and in the surrounding area is primary mid-frequency range (400 Hz to 3.15KHz).

The largest variances in sound pressure readings, at varying monitoring locations, in noted from 400Hz bandwidth upwards. At mid to high frequency bandwidth's (400 to 4 KHz) monitoring position N4 located at the western boundary and N6 along the northern boundary, the sound pressure levels are at there highest. At mid-frequencies (400Hz to 3.15 KHz) dominance of sound pressure is found at monitoring stations N3, located at the south-western boundary of the KMK Metals site.

Monitoring position N3, located on the south western boundary of the site and along the back of the D3 processing area. This station was subject to noise arising from processing area from machines and a radio.

Noise levels at N4, located along the western boundary on of the KMK Metals site was located in close proximity to the LHA baler and grab unit. Vehicle movements to the D4, DX and D1 areas were audible from this location. Increased noise arising from the baler during its operation and while idling were also very audible at this station.

N6, positioned near the unloading of LHA's (Cold) for storage to the front of the facility at the D4 yard area, received high sound pressure readings at high frequency bandwidth's. Forklifts operating, the scraping of metal on metal the noise from a truck with its engine idling on the roadway in close proximity to the site boundary along with other general site operations all increased these high frequency noise readings.

Analysis of the octave frequencies at the KMK Metals Recycling facility show all monitoring stations to have a close relationship across the varying bandwidths. As mentioned the general trend noted is a slow rise in sound pressure from low frequency (20Hz) to mid frequency (400 Hz to 2KHz) and a generally slow decrease (apart from Station N6) in sound pressure from a mid- frequency of 2.5KHz to high frequency (16KHz).

3.2 $^1/_3$ Octave Analysis

The overview chart of all monitoring stations shows a similar trend to that seen in the octave analysis chart, with sound pressure levels beginning low and rising sharply at the 20 Hz bandwidth, sound pressure continues to rise across frequency bandwidths till levels peak at 400 Hz to 2.5 KHz, before tailing off at higher frequencies. Higher sound pressure readings are noted at monitoring stations N3 located along the southern boundary of the KMK Metals site in the mid (315Hz -2.5KHz) and N4 located at the western boundary of the KMK Metals site, particularly at mid (1.25 KHz– 5KHz) frequency band's. Monitoring station N6, located at the sites north-western boundary recorded high sound pressure readings at high frequency bandwidth's (400 Hz to 3.15 KHz).

N1 positioned on the east boundary of the carpark showed a gentle rise in the sound pressure beginning at 20 Hz, continuing in to a gentle rise which levelled between the mid-frequency bandwidth of (800Hz-1.25 KHz) before a gentle fall in sound pressure levels from 3.15 KHz to a low level at 12.5 KHz frequency bandwidth's. The N1 noise monitoring station was the located close to one of the sites entrance gates and in close proximity to forklift trucks operating located nearby. The rise in sound pressure at this location was gradual with no sharp peaks noticeable.

N2 positioned on the eastern boundary of the site shows a gradual increase in the sound pressure levels from 31.5 Hz to a peak at 125 Hz. Sound pressure levels remain relatively consistent from 200 Hz to 800Hz before slowly increasing at higher frequencies. Typical peak noise sources appear to occur in the mid to high frequency levels of 600 Hz to 3.15 KHz, with no apparent tonal components affecting any specific frequency bandwidth. Specific noise sources recorded at this station included noise from forklift trucks in the yard area, reverse alarms, movement of cages and vehicle movements on the nearby industrial estate road.

N3 positioned on the south-western boundary of the facility shows a gradual increase in sound pressure at frequency bandwidth 20 Hz to 80 Hz. A continual and gradual increase in sound pressure levels is noted from 100 Hz to 500 Hz where an increase is visible to 800 Hz. Sound pressure levels remain relatively stable to 1.6 KHz before sound pressure levels begin to slowly reduce. Noise levels at this location were noted to be affected by the processing operations as well as background noise which was sourced from a radio in the D3 building.

N4 positioned along the western boundary, shows a increase in sound pressure levels to a frequency of 50Hz. From 50 Hz to 160Hz, the sound pressure levels remain relatively stable. An increase in sound pressure levels is noted from 36 dB(A) at 160 Hz to a peak of 55 dB(A) at 2 KHz. This peak value remains relatively stable to 3.15 KHz, where sound pressure levels begin to diminish to a low of 37dB(A) at 12.5 KHz. Monitoring records at station N4 show that most noise source emanated from the LHA baler unit and forklift trucks in operation.

N5 positioned to the north-western boundary of the D4 yard area, did not show any sharp increases in sound pressure, the levels increased to between 44dB (A) and 51dB (A) at the mid- frequency level of 400 Hz to2.5KHz. There were no noticeable peaks at this location

N6 positioned on the western boundary of the facility, shows a steep rise from a sound pressure, reading of 13dB at 20 Hz to 60 dB(A) at 400 Hz. Sound pressure levels level out at 60 dB(A) from 400 Hz to 2.5 KHz. At 3.15 KHz sound pressure levels again increase to a peak of 65 dB(A) after which levels begin to reduce to a L_{Aeq} lower frequency of 36dB(A) at 16 KHz. Noise arising from activities within the D4 yard area and the industrial estate road were highly audible at this location. The $^1/_3$ octave analysis highlighted an increase at a 3.15KHz frequency bandwidth, however tonal noises were not noted at this location.

Overall results for the 1/3 octave analysis at the KMK Metal Recycling facility, show level of noise to be moderate to high, with primary noise arising from facilities associated with the movement of forklift trucks associated with unloading of LHA's for processing and LHA's (cold) for storage at the KMK Metals facility. There were also some indirect noise levels which were sourced from truck movements not associated the KMK Metals facility.

4.0 Conclusions

Environmental noise monitoring was carried out by ENVIROCO Management Ltd at the KMK Metals Recycling Ltd facility situated within the Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly, on the 8th august 2008. Monitoring was requested by Mr. Kurt Kyck of KMK Metals Recycling Ltd as part of the Annual Environmental Report for submission to the Environmental Protection Agency.

Noise monitoring was conducted utilising the Bruel Kjaer 2250 SLM with wind muffler noise meter. This monitor was operates as a Real Time Analyser (RTA) and Sound Level Meter (SLM), enabling both statistical analysis of the audible noise and breakdown of the sound pressure recorded into frequency bandwidths.

The statistical analysis of the noise at boundary monitoring stations shows that L_{Aeq} levels increase with proximity to the main road. Notes of audible noise source, taken by staff on ENVIROCO Management Ltd. noted that primary noise arising from the activities at the KMK Metals facility were located to the front of the site (north-western and western boundaries).

Statistical analysis of noise at sensitive receivers was lower at stations located east and south of the site. All noise monitoring locations showed results which were above the EPA recommended guidelines of 55 dB (A), the highest reading from the N6 station was associated with the unloading of a truck containing LHA's as well as vehicle movements not associated with the site.

Octave analysis of the measurements taken at the facility boundaries and at noise sensitive locations, show a general trend for sound pressure to start low at low frequency, increasing gradually to mid-frequency ranges and a peak at higher frequency levels, with an overall reduction in sound pressure levels from the 3.15KHz to 8KHz. Tonal components of noise recorded during the day were not shown.

Noise monitoring at the KMK Metals Recycling Ltd facility did indicate exceedances, however notable exceedences did not occur at noise sensitive locations. The noise levels associated with the LHA baler unit will no longer result in such high levels as the unit is now housed in building DX. It is not believed that the noise arising from operations at the KMK Metals Recycling facility will be likely to disturb or annoy at selected noise sensitive receivers.

Appendix A

- **Noise Results & Charts**

Noise Results

Client: KMK Metals Recycling Ltd
Site: Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly
Monitoring Date: 8th August 2008
Sampler: Pamela Maleady (ENVIROCO Management Ltd)
Weather: Calm to light breeze, cold with clear skies, becoming increasingly overcast as the day progressed
Equipment: Bruel Kjaer 2250 SLM with wind muffler

Table 1 Noise Results

Number	Time	Duration (min)	L_{eq} dB(A)	L_{max} dB(A)	L_{min} dB(A)	$L_{(1)}$ dB(A)	$L_{(5)}$ dB(A)	$L_{(10)}$ dB(A)	$L_{(50)}$ dB(A)	$L_{(90)}$ dB(A)	$L_{(99)}$ dB(A)
N1	10:01	30:00.0	58	76	41	69	61	60	52	46	43
N2	10:36	30:00.0	63	96	39	70	67	66	53	46	42
N3	11:17	30:00.0	63	75	48	69	67	66	63	58	52
N4	11:59	30:00.0	63	91	48	70	66	65	62	61	49
N5	12:33	30:00.0	59	80	55	66	62	61	58	56	55
N6	14:31	30:00.0	72	93	51	81	77	75	68	59	56

Notes

Table 2 Notes Regarding Monitoring Positions

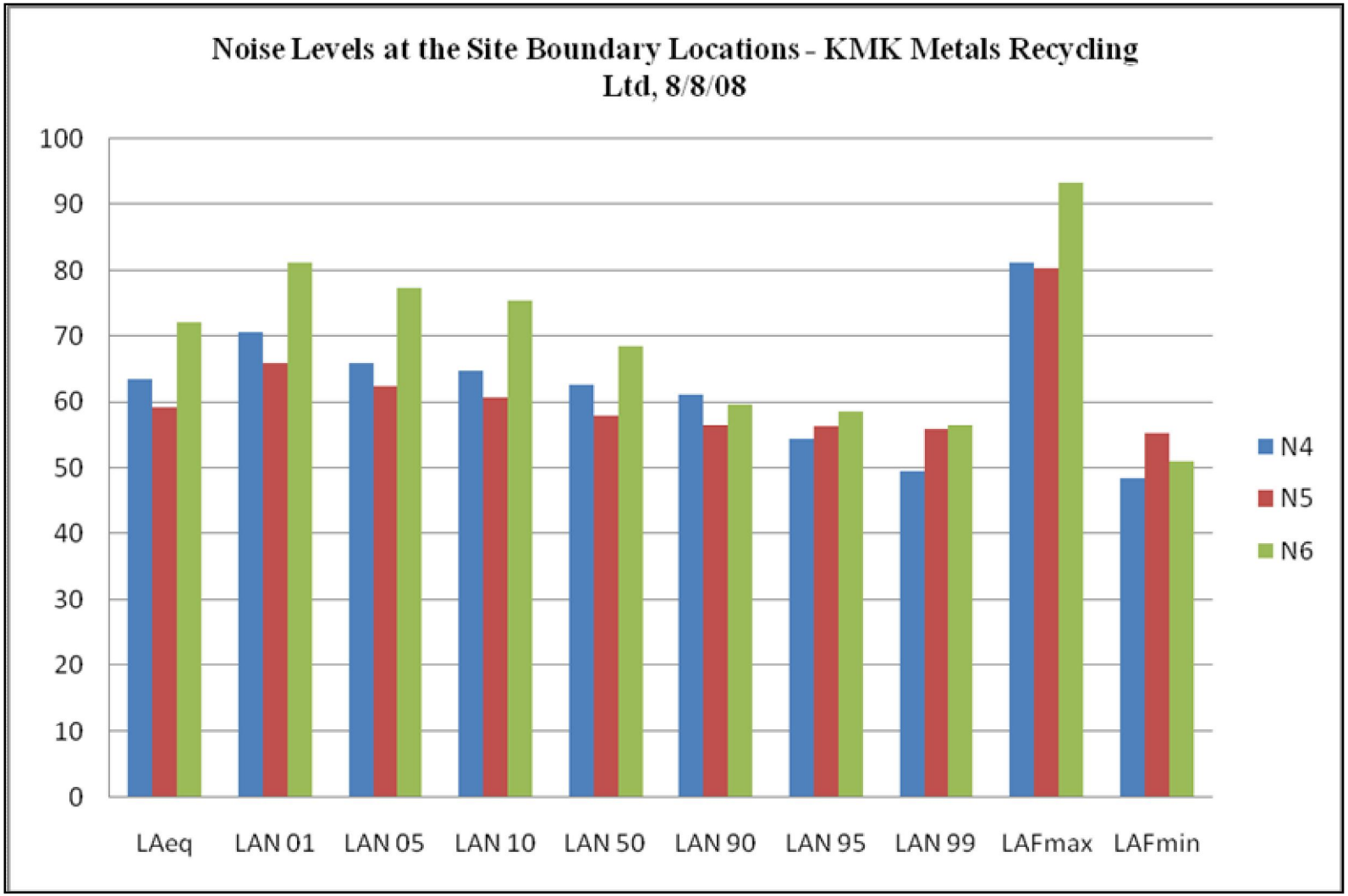
Number	Grid Ref.*		Comments
	Easting	**Northing**	
N1	235946	225050	Car park at fence boundary
N2	235951	225017	Eastern boundary, beside disused portacabin
N3	235858	224964	Fence at South-western boundary
N4	235876	225014	Western boundary
N5	235869	225036	North-western boundary at washing machine processing area
N6	235904	225031	Northern beside the fridge storage area (D4 yard)

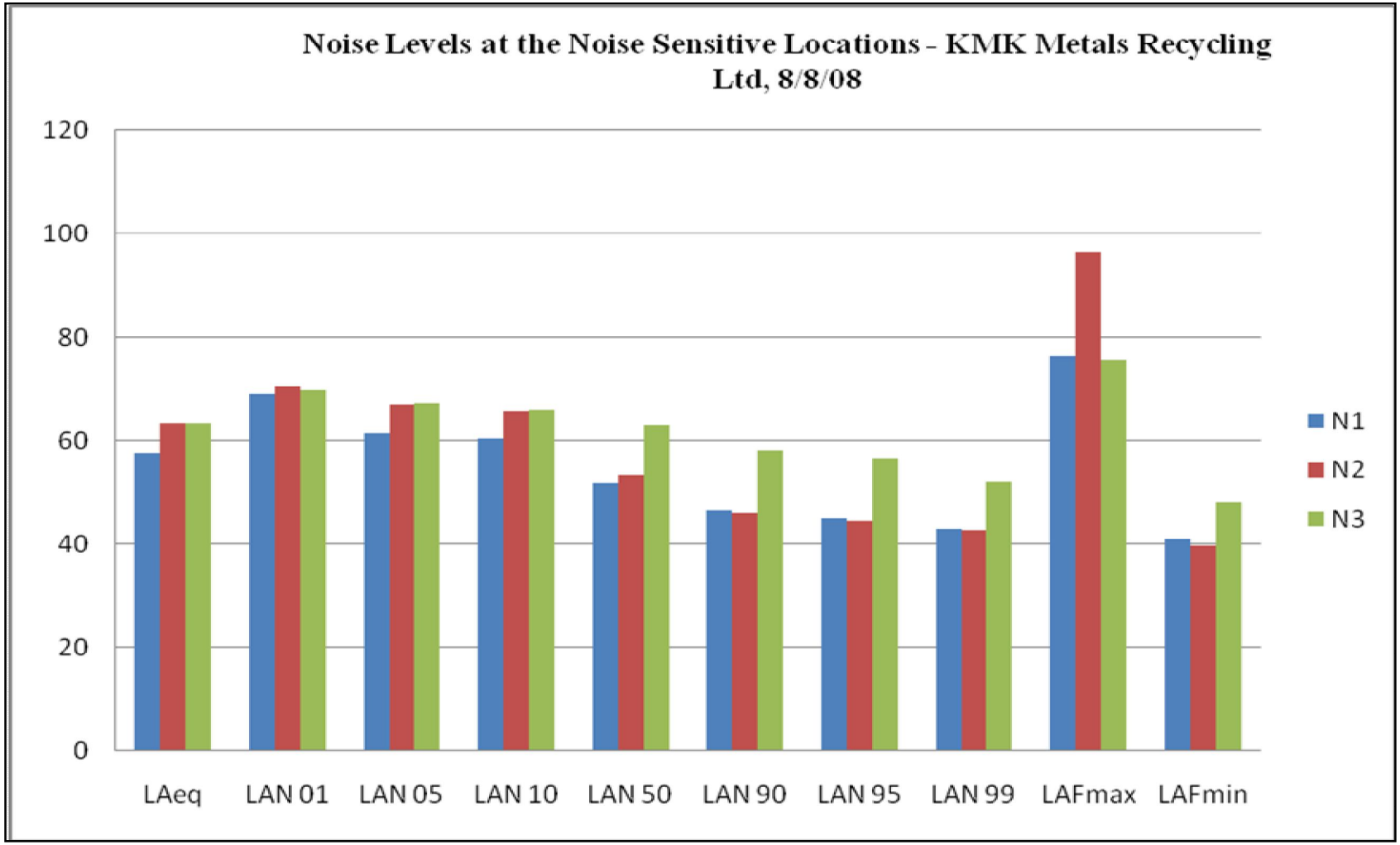
*Grid reference are 6 figure Irish Grid reference

Table 3 Weather Data 08-08-08

Weather Station	Rain (mm)	Max temp (˚C)	Min temp (˚C)	Sun (hours)	Gust (knots)	Wind (knots)
Birr	0.0	18.7	7.6	5.4	0	4.2

The above data refer to the period midnight to midnight They are provisional data and have not been quality controlled Rain is total precipitation plus deposition in mm. Max is the maximum temperature in Degrees Celsius Min is the minimum temperature in Degrees Celsius Sun is the total sunshine in hours Gust is the highest gust of wind in knots if 34 knots or greater Wind is the mean wind speed in knots Soil is the mean 10cm temperature in Degrees Celsius G_{min} is the minimum temperature on a grass surface in Degrees Celsius.


Noise Levels at the Site Boundary Locations - KMK Metals Recycling Ltd, 8/8/08
100
90
80
70
60
50
40
30
20
10
0
LAeq
LAN 01
LAN 05
LAN 10
LAN 50
LAN 90
LAN 95
LAN 99
LAFmax
LAFmin
N4
N5
N6


Noise Levels at the Noise Sensitive Locations - KMK Metals Recycling Ltd, 8/8/08
120
100
80
60
40
20
0
LAeq
LAN 01
LAN 05
LAN 10
LAN 50
LAN 90
LAN 95
LAN 99
LAFmax
LAFmin
N1
N2
N3

Noise Results

Client: KMK Metals Recycling Ltd
Site: Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly
Monitoring Date: 8th August 2008
Sampler: Pamela Maleady (ENVIROCO Management Ltd)
Weather: Calm to light breeze, cold with clear skies, becoming increasingly overcast as the day progressed
Equipment: Bruel Kjaer 2250 SLM with wind muffler

Notes:
The Bruel Kjaer 2250 SLM was calibrated to 114 dB prior to sampling.

Table 1 Record of Monitoring Events and L_{Aeq} values

Rec #	Date	Time	Duration	L_{eq}
N1	08-Aug-08	10:01	30:00.0	58
N2	08-Nov-08	10:36	30:00.0	63
N3	08-Aug-08	11:17	30:00.0	63
N4	08-Nov-08	11:59	30:00.0	63
N5	08-Aug-08	12:33	30:00.0	59
N6	08-Nov-08	14:31	30:00.0	72

Table 2 Monitoring Locations

Monitoring Locations	Grid Reference (ING)	
	Easting	Northing
N1	235946	225050
N2	235951	225017
N3	235858	224964
N4	235876	225014
N5	235869	225036
N6	235904	225031

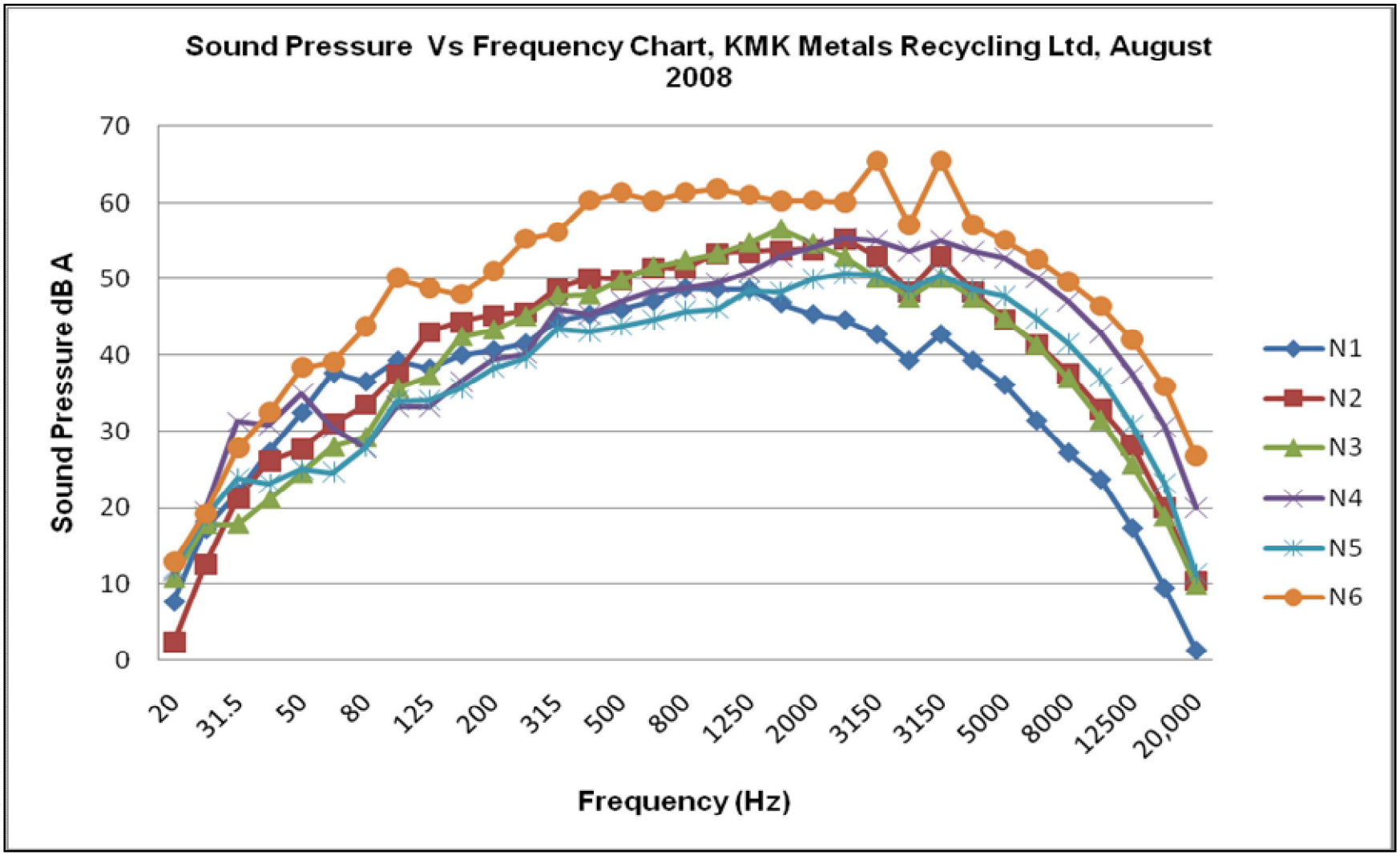
Table 5 Statistical Analysis of Noise Readings

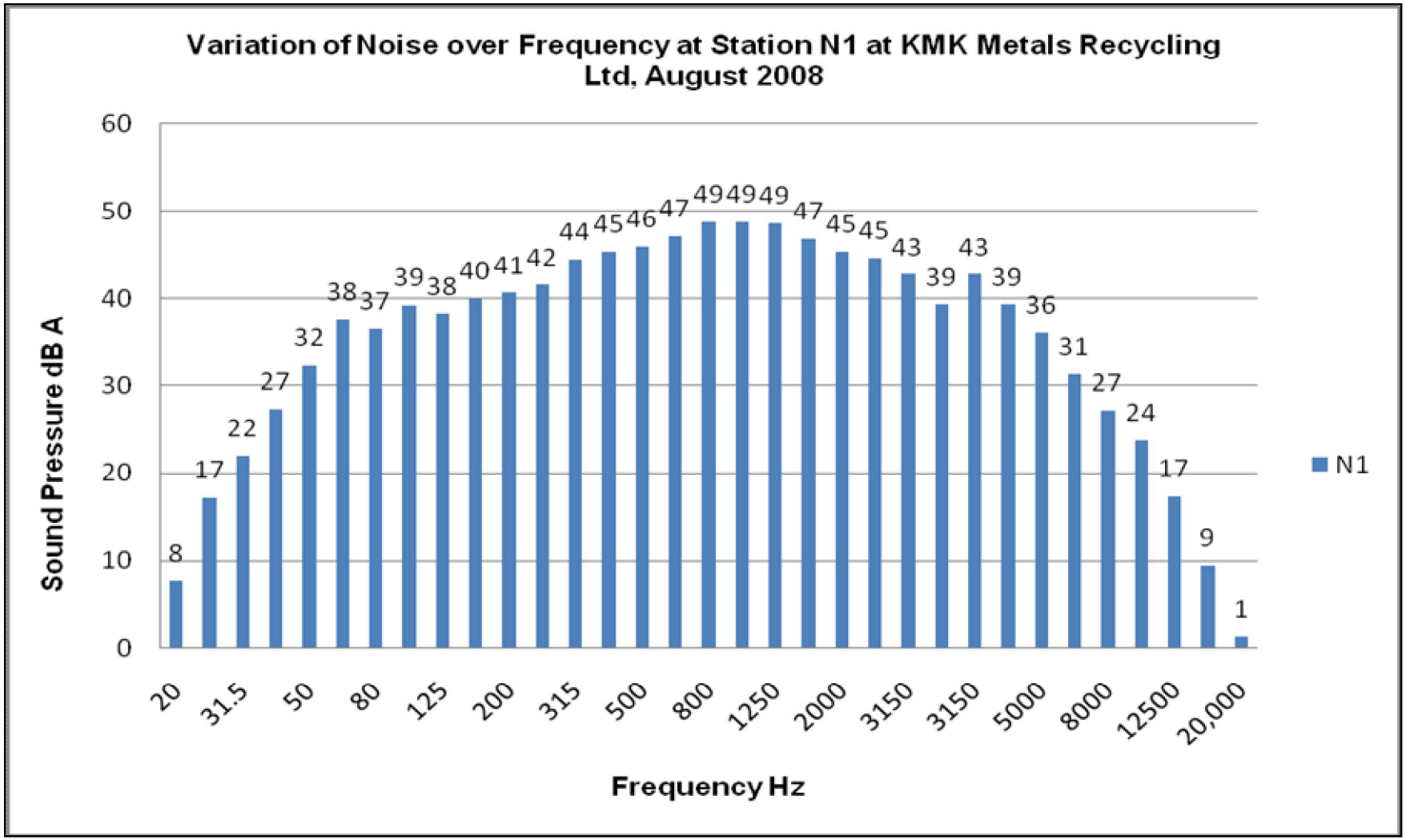
Project Name	LAeq	LAN 01	LAN 05	LAN 10	LAN 50	LAN 90	LAN 95	LAN 99
N1	58	69	61	60	52	46	45	43
N2	63	70	67	66	53	46	44	43
N3	63	69	67	66	63	58	56	52
N4	63	70	66	65	62	61	54	49
N5	59	66	62	61	58	56	56	56
N6	72	81	77	75	68	60	59	56

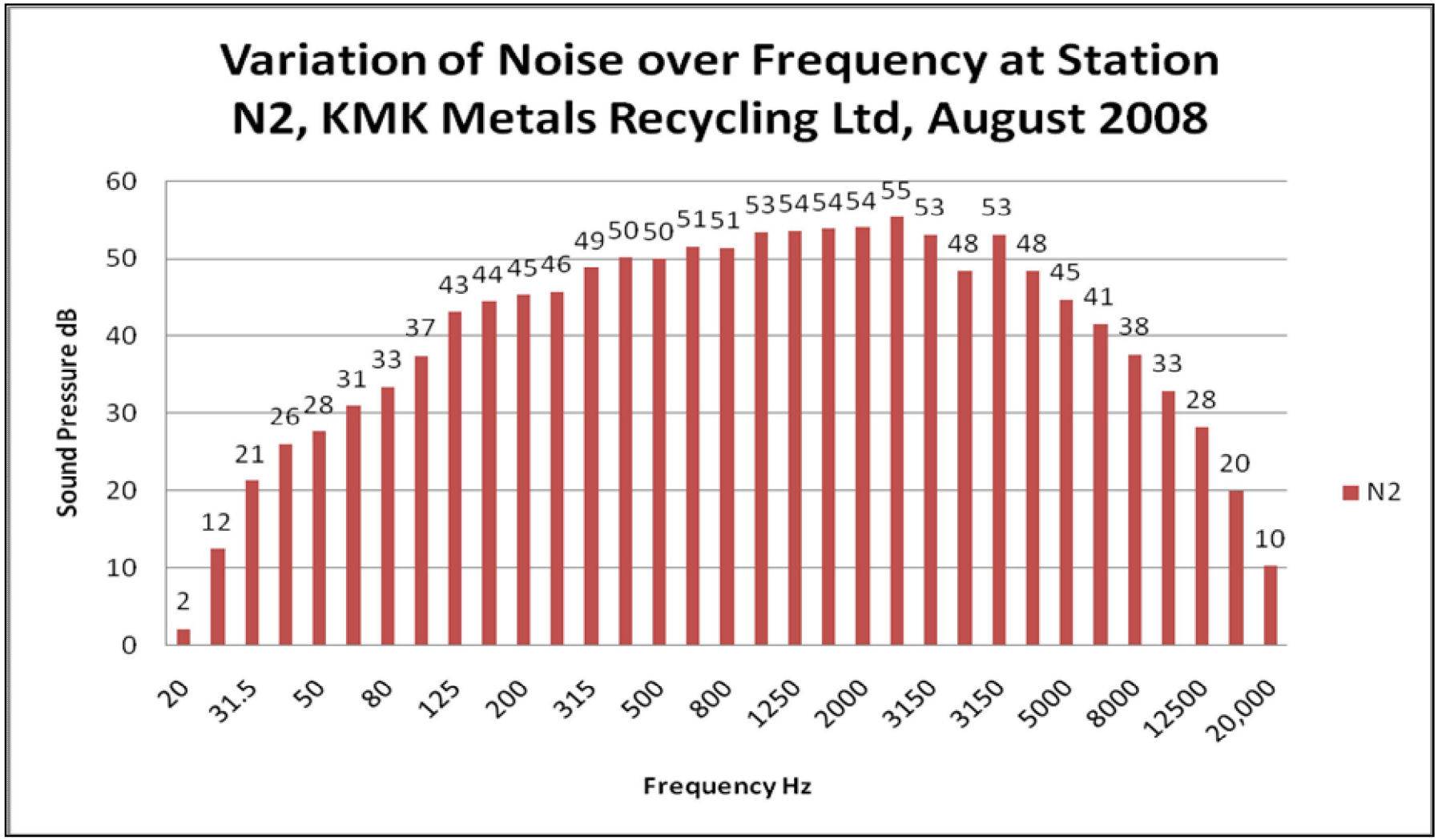
Table 6 L_{Aeq} Full Octave Analysis of Noise Measurements, taken on the 8th August 2008

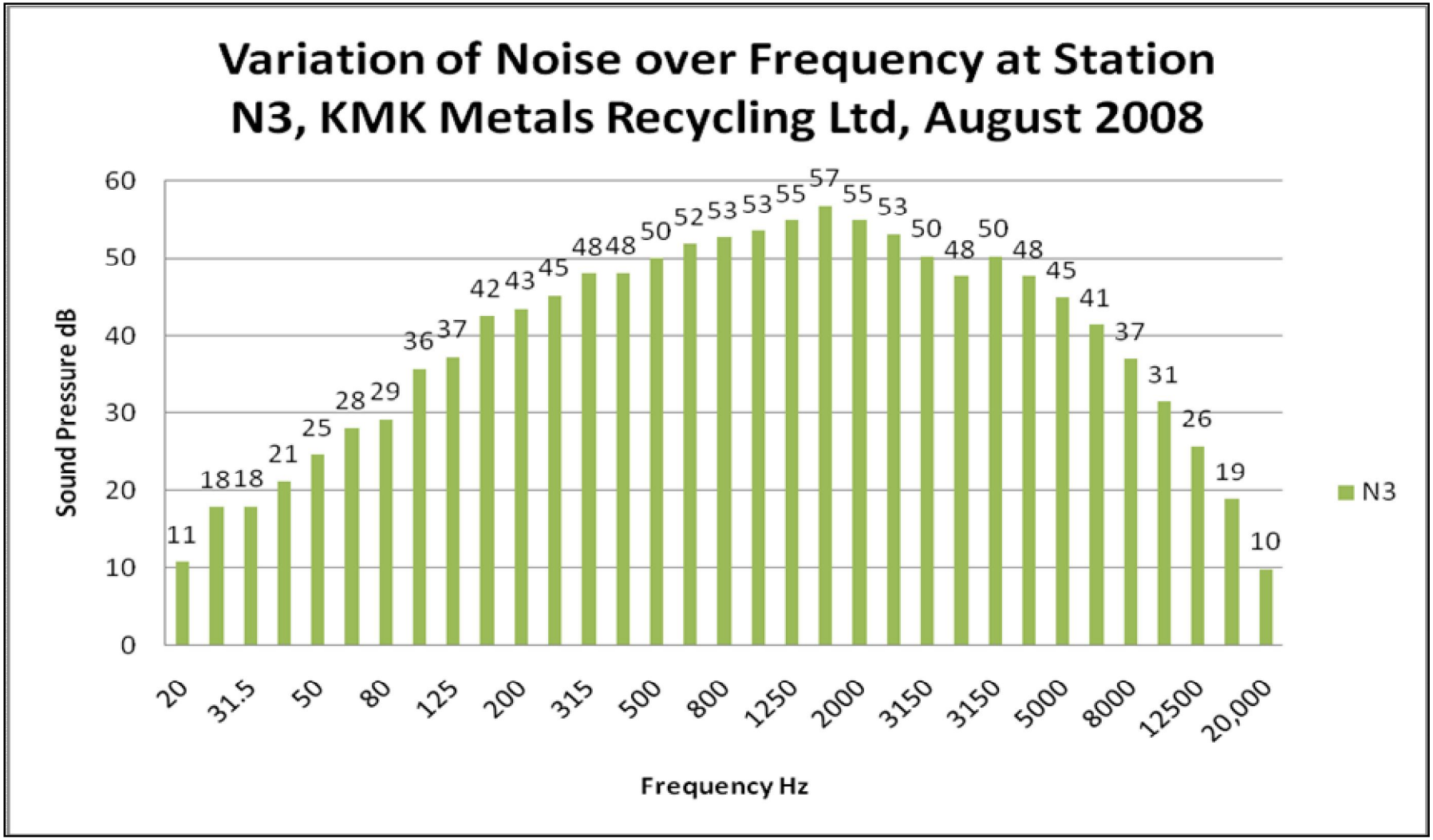
	L_{Aeq} Frequency (Hz)																
Project Name	**20**	**25**	**31.5**	**40**	**50**	**63**	**80**	**100**	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**
N001	7.64	17.22	21.95	27.29	32.43	37.65	36.53	39.32	38.29	40.05	40.68	41.59	44.43	45.37	46.03	47.14	48.86
N002	2.21	12.49	21.22	26.04	27.62	30.97	33.43	37.44	43.05	44.37	45.2	45.6	48.71	50.06	49.92	51.47	51.36
N003	10.82	17.86	17.93	21.16	24.57	28.01	29.23	35.69	37.27	42.49	43.41	45.15	47.85	48	49.91	51.73	52.57
N004	11.66	19.54	31.22	30.77	34.92	30.44	27.82	33.23	33.17	36.42	39.51	40.19	45.95	45.35	47.03	48.49	48.73
N005	12.01	18.81	23.86	23.21	25.05	24.61	27.9	34	34.03	35.64	38.35	39.62	43.53	43.07	43.88	44.65	45.8
N006	12.8	19.17	27.75	32.43	38.35	39.06	43.71	50.15	48.81	48.03	51	55.29	56.16	60.33	61.4	60.24	61.34

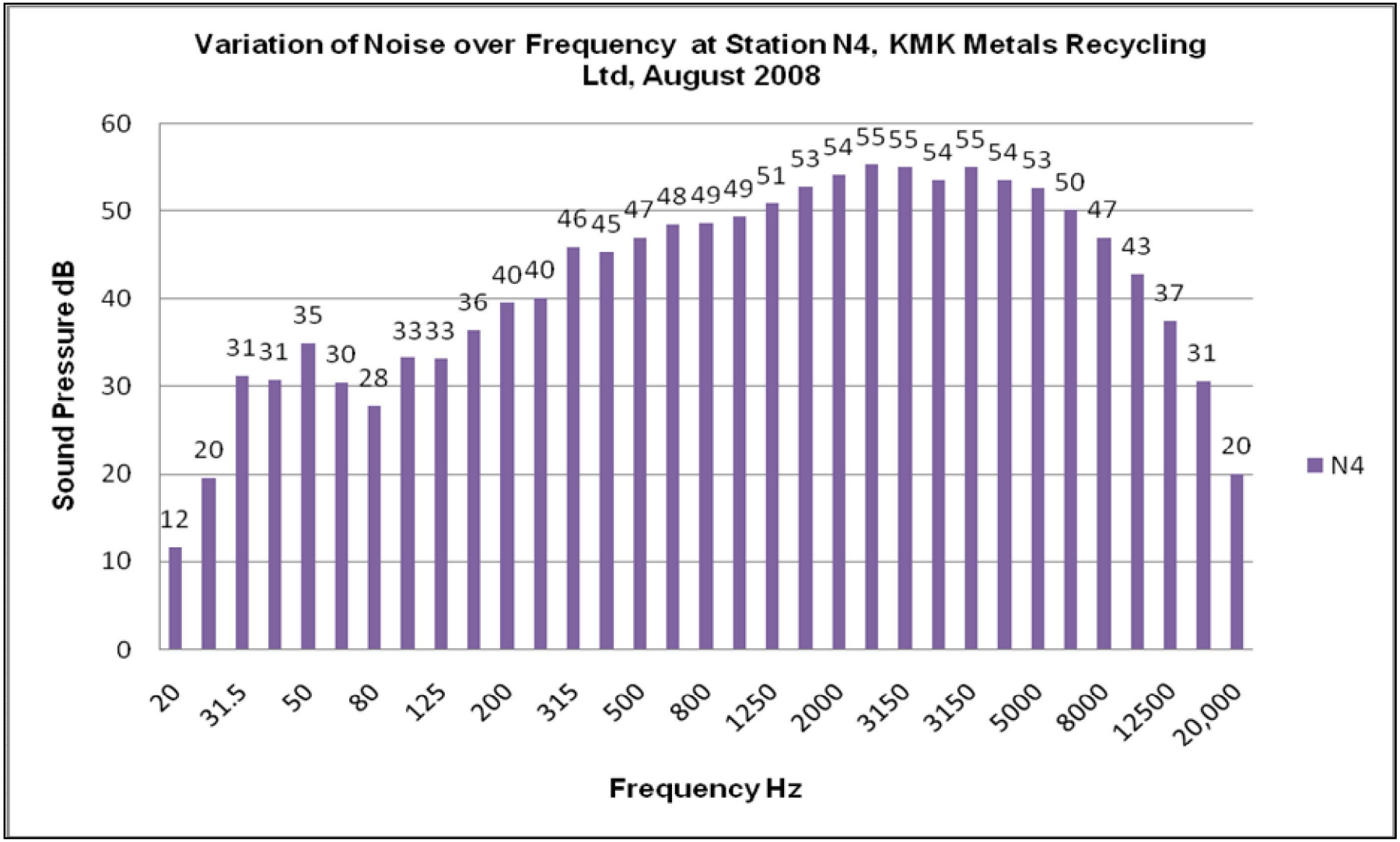
	L_{Aeq} Frequency (Hz)													
Rec#	**1k**	**1.25k**	**1.6k**	**2k**	**2.5k**	**3.15k**	**4k**	**5k**	**6.3k**	**8k**	**10k**	**12.5k**	**16k**	**20k**
N001	48.75	48.73	46.84	45.42	44.66	42.77	39.33	36.1	31.41	27.2	23.73	17.36	9.46	1.23
N002	53.34	53.52	53.81	53.89	55.32	52.98	48.35	44.63	41.4	37.59	32.87	28.15	19.97	10.33
N003	53.44	54.82	56.67	54.73	52.99	50.19	47.59	44.87	41.38	36.99	31.49	25.71	18.86	9.87
N004	49.42	50.87	52.88	54.2	55.39	55.09	53.61	52.75	50.1	47.08	42.88	37.45	30.57	20.01
N005	46.12	48.47	48.27	50	50.74	50.53	48.58	47.78	44.83	41.53	37.05	30.8	23.15	11.25
N006	61.84	61.02	60.23	60.32	60.05	65.49	57.11	55.09	52.58	49.65	46.44	42.02	35.87	26.71

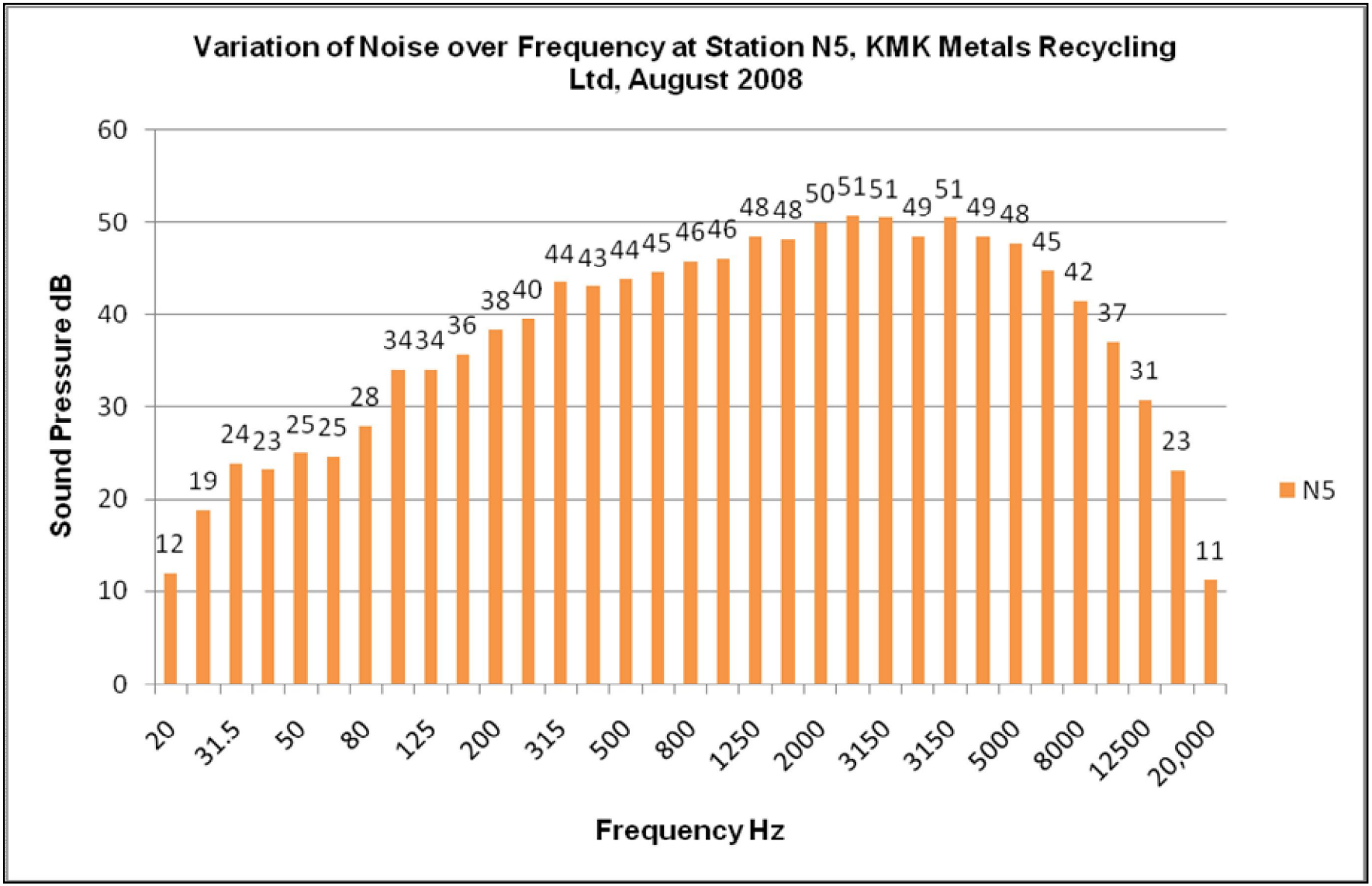

Sound Pressure Vs Frequency Chart, KMK Metals Recycling Ltd, August 2008
Sound Pressure dB A
70
60
50
40
30
20
10
0
20
31.5
50
80
125
200
315
500
800
1250
2000
3150
3150
5000
8000
12500
20,000
Frequency (Hz)
N1
N2
N3
N4
N5
N6

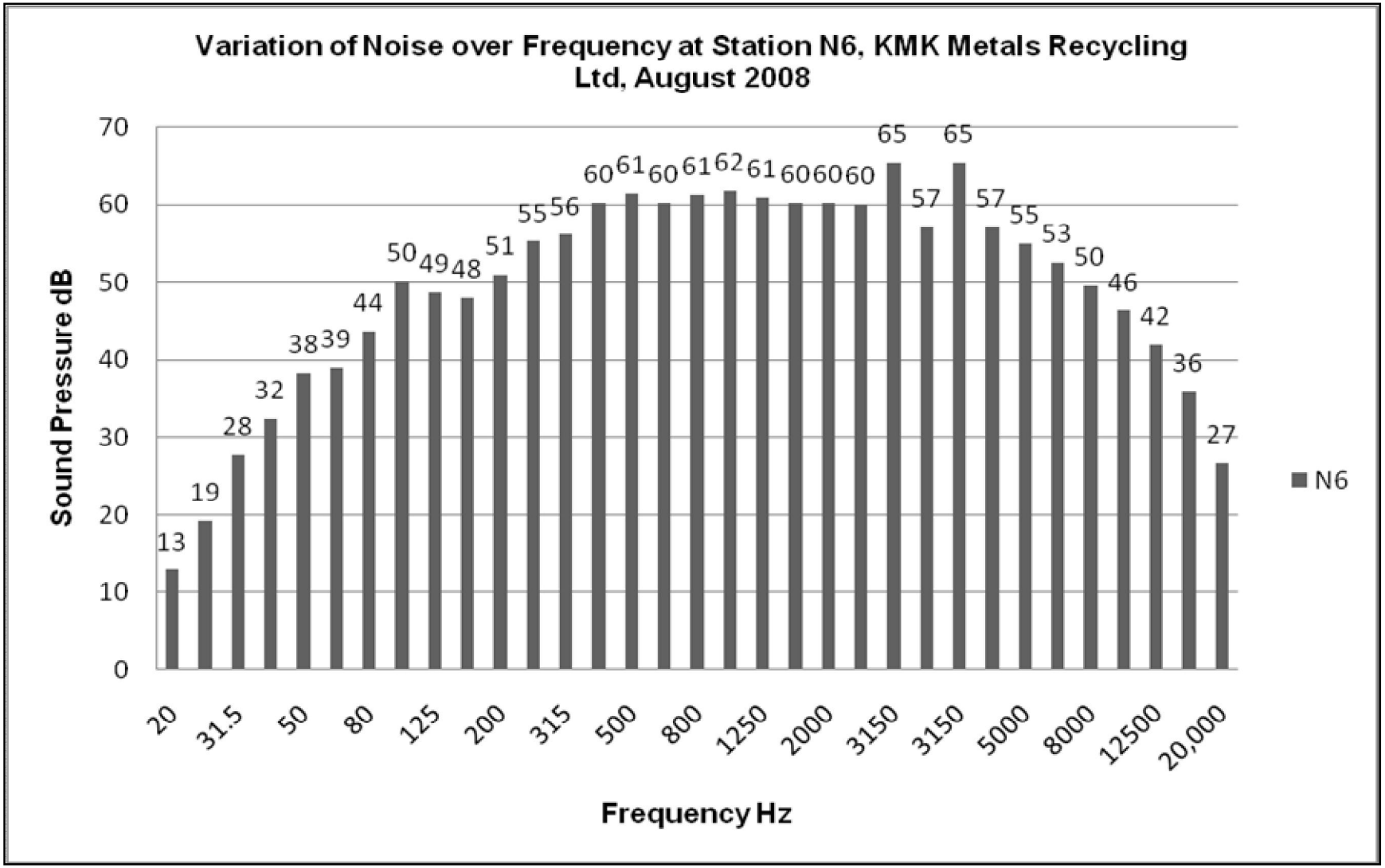

Variation of Noise over Frequency at Station N1 at KMK Metals Recycling Ltd, August 2008
Sound Pressure dB A
Frequency Hz
N1
0
10
20
30
40
50
60
8
17
22
27
32
38
37
39
38
40
41
42
44
45
46
47
49
49
49
47
45
45
43
39
43
39
36
31
27
24
17
9
1
20
31.5
50
80
125
200
315
500
800
1250
2000
3150
3150
5000
8000
12500
20,000


Variation of Noise over Frequency at Station N2, KMK Metals Recycling Ltd, August 2008
Sound Pressure dB
0
10
20
30
40
50
60
2
12
21
26
28
31
33
37
43
44
45
46
49
50
50
51
51
53
54
54
54
55
53
48
53
48
45
41
38
33
28
20
10
20
31.5
50
80
125
200
315
500
800
1250
2000
3150
3150
5000
8000
12500
20,000
Frequency Hz
N2


Variation of Noise over Frequency at Station N3, KMK Metals Recycling Ltd, August 2008
Sound Pressure dB
0
10
20
30
40
50
60
11
18
18
21
25
28
29
36
37
42
43
45
48
48
50
52
53
53
55
57
55
53
50
48
50
48
45
41
37
31
26
19
10
20
31.5
50
80
125
200
315
500
800
1250
2000
3150
3150
5000
8000
12500
20,000
Frequency Hz
N3


Variation of Noise over Frequency at Station N4, KMK Metals Recycling Ltd, August 2008
Sound Pressure dB
60
50
40
30
20
10
0
12
20
31
31
35
30
28
33
33
36
40
40
46
45
47
48
49
49
51
53
54
55
55
54
55
54
53
50
47
43
37
31
20
20
31.5
50
80
125
200
315
500
800
1250
2000
3150
3150
5000
8000
12500
20,000
Frequency Hz
N4


Variation of Noise over Frequency at Station N5, KMK Metals Recycling Ltd, August 2008
Sound Pressure dB
60
50
40
30
20
10
0
12
19
24
23
25
25
28
34
34
36
38
40
44
43
44
45
46
46
48
48
50
51
51
49
51
49
48
45
42
37
31
23
11
20
31.5
50
80
125
200
315
500
800
1250
2000
3150
3150
5000
8000
12500
20,000
Frequency Hz
N5


Variation of Noise over Frequency at Station N6, KMK Metals Recycling Ltd, August 2008
Sound Pressure dB
Frequency Hz
N6
0
10
20
30
40
50
60
70
13
19
28
32
38
39
44
50
49
48
51
55
56
60
61
60
61
62
61
60
60
60
65
57
65
57
55
53
50
46
42
36
27
20
31.5
50
80
125
200
315
500
800
1250
2000
3150
3150
5000
8000
12500
20,000

APPENDIX 6

Water Quality Analysis Test Certificate