

**ATTACHMENT E  
EMISSIONS**

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## E.1 Emissions to Atmosphere.

### E.1.a. Details of all Point Emissions to Atmosphere.

There are two point emission sources to atmosphere from the facility as shown on the attached Site Emissions Monitoring Plan Ref: 12039-LA-05, ie;

- A1 - CRT dismantling line (CRT)
- A2 - Flat panel dismantling line (FPD)

These point sources have only recently been installed and are currently being commissioned. Consequently there has been no testing carried out of the emissions from these extraction ducts as part of this Waste licence application. It is expected that emissions testing from these vents will be carried out as part of the Waste Licence requirements.

However, prior to installing the extraction vents, a series of occupational dust sampling surveys were carried out at the facility.

Monitoring of personal exposure to total inhalable dust and metals was carried out using calibrated personal sampling pumps with the IOM sampling head located in the breathing zone ie. attached to the lapel or collar. Sampling was carried out on selected employees during activities that that were representative of those carried out throughout a typical day.

The filters were analysed by a third party environmental laboratory for total inhalable dust and the following heavy metals that were deemed appropriate to the WEEE recycling activities - barium, cadmium, copper, iron, lead, mercury, nickel, phosphorus, zinc and chromium VI.

The results are shown in the following table.

Substance	8 hour TWA	FPD Start	FPD Centre	FPD End	064070-D1	064071-D2	064073-D3	064072-D4
	(mg/m <sup>3</sup> )							
Inhalable Dust (total)	10	1.58	1.36	1.14	1.53	3.50	0.86	0.53
Barium (soluble)	0.5	<0.006	<0.006	<0.006	0.01	0.23	<0.006	<0.006
Cadmium	0.025	0.006	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001
Chromium VI (soluble)	0.05	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006	<0.006
Copper (dust & mist)	1	<0.002	<0.002	<0.002	0.003	<0.001	<0.001	0.008
Iron (salts)	1	0.09	0.09	0.14	0.07	0.04	0.04	0.02
Lead	0.15	0.02	0.02	0.006	0.06	0.04	0.03	<0.006
Mercury	0.025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel - (soluble)	0.1	<0.002	<0.002	<0.002	0.01	<0.001	<0.001	<0.001
Phosphorus (yellow)	0.1	0.008	<0.006	0.008	<0.006	<0.006	<0.006	<0.006
Zinc oxide (fume)	5	0.05	0.07	0.04	0.12	0.06	0.04	0.008

The above results were compared to the 8 hour time weighted average Occupational Exposure Limit Values (OELV<sub>8</sub>) as detailed in the Health & Safety Authority 2010 Code of Practice for the Safety, Health & Welfare at Work (Chemical Agents) Regulations 2001 (SI No. 619 of 2001).

The concentrations of total inhalable dust and the various metals were all well below the published OELV<sub>8</sub>.

Consequently, based on the results of the occupational dust surveys, it is concluded that there are no respirable occupational health & safety issues in relation to the substances tested for. Therefore, the concentration of dust and heavy metals that will be discharged to atmosphere from point sources A1 and A2 is likely to be insignificant.

*E.1.b. Fugitive and Potential Emissions.*

As part of the existing Waste Permit, The Recycling Village Ltd carries out quarterly dust deposition monitoring at the following site boundary locations as shown on the attached Site Emissions Monitoring Plan Ref: 12039-LA-05.

Monitoring Location	Description of Location
D1	Corner site boundary at the main site entrance gate
D2	Corner site boundary at the yard entrance gate
D3	Corner site boundary at the rear of the yard
D4	Corner site boundary at the rear of the building

The results of the most recent site boundary dust deposition surveys are presented below.

Location	Solids (mg/l)	Total Volume (l)	Total Solids/ Sample (mg)	Dust Deposition (mg/m <sup>3</sup> /d)	Nuisance Limit (mg/m <sup>3</sup> /d)
Jan ó Feb 2012					
D1	5.79	1.0	5.79	3.69	350
D2	<2	<1.5	<3	<1.91	350
D3	<2	<1.5	<3	<1.91	350
D4	No Result	1.0	No Result	No Result	350
May ó June 2012					
D1	<4	5.0	<20	13.16	350
D2	<4	4.5	<18	11.85	350
D3	<4	3.5	<14	9.21	350
D4	6.84	4.0	27.36	18.01	350

The above dust deposition results are all in compliance with the permit limit of 350 mg/m<sup>2</sup>/day and show that there is no issue with dust deposition at the site boundary.

*E.2. Emissions to Surface Water.*

There are no process effluent emissions from the facility and no emissions to surface water.

This section is not applicable.

*E.3. Emissions to Sewer.*

There are no process effluent emissions from the facility to sewer.

There are effluent emissions from the site toilets, canteen and staff changing rooms to the local authority foul sewer as shown on Site Drainage Plan Ref: 12039-LA-01.

The yard run off water drains to an interceptor prior to discharge to the local authority foul sewer as shown on Site Drainage Plan Ref: 12039-LA-01.

As part of the existing Waste Permit, The Recycling Village Ltd take quarterly samples of the effluent from the final chamber of the interceptor sump for analysis by a third party laboratory.

The results of the previous analyses are presented below.

<b>Parameter</b>	<b>Sept 2011</b>	<b>Oct 2011</b>	<b>Feb 2012</b>	<b>June 2012</b>
BOD (mg/l)	10.3	3.03	9.13	3.33
PH	7.76	7.48	7.76	7.88
Total Suspended Solids (mg/l)	253	14.4	13.0	4.74
Total Ammonia (mg/l)	2.7	<0.2	2.64	2.71
Mineral Oils (mg/l)	1.62	284	<1	182
Total PAHs (mg/l)	No result	1.2	<0.247	<1
VOCs (ug/l)	< 1	<1	<1	<1
Organophosphorous pesticides (ug/l)	<0.01	<0.01	<0.01	<0.01
Organochlorine pesticides (ug/l)	<0.01	<0.01	<0.01	<0.01
Arsenic (ug/l)	0.985	0.672	0.835	0.456
Lead (ug/l)	18.2	45	25.5	82
Iron (mg/l)	<0.019	0.0583	<0.019	0.105
Cadmium (ug/l)	1.61	4.01	1.94	4.25
Chromium (ug/l)	3.71	8.55	<0.22	7.84
Glycol (mg/l)	<10	<10	<10	<10

The above effluent discharge sampling results show that there are no significant concentrations of chemicals that could cause damage to the sewer or effluent treatment process.

Consequently the nature and quality of the yard effluent run off from the site to sewer is unlikely to have a significant negative impact on the sewer or effluent treatment process.

*E.4. Emissions to Groundwater.*

The Recycling Village Ltd facility and external yard are covered in concrete to prevent potential soil and groundwater pollution from spillages and leaks.

Clean rain water run off from building roof and the external yard drains from the site into the local authority sewer (Site Drainage Plan Ref: 12039-LA-01).

The site interceptor sump has been drained and inspected. The attached inspection report shows that the sump is structurally sound and intact.

Consequently, there are no emissions to groundwater from the facility and there are no groundwater monitoring boreholes at the site.

*E.5. Noise Emissions.*

As part of the existing Waste Permit, The Recycling Village Ltd carries out annual noise monitoring at the following site boundary locations as shown on the attached Site Emissions Monitoring Plan Ref: 12039-LA-05.

<b>Monitoring Location</b>	<b>Description of Location</b>
N1	Corner site boundary at the main site entrance gate
N2	Corner site boundary at the yard entrance gate
N3	Corner site boundary at the rear of the yard
N4	Corner site boundary at the rear of the building

The results of the last noise survey carried out in February 2012 are presented below.

<b>Location</b>	<b>Weather</b>	<b>Start Time</b>	<b>Duration</b>	<b>LAeq</b>	<b>Comments</b>
N1	Drizzle	14:00	30 mins	64.4	Site operational. Noise from adjacent sites fridge units.
N2	Dry, Cloudy	15:55	30 mins	51.9	Site operational. Noise from intermittent use of compressor.
N3	Dry, Cloudy	15:20	30 mins	48.8	Site operational. Noise from RV facility.
N4	Dry, Cloudy	14:40	30 mins	57.8	Site operational. Noise from RV facility.

The day-time boundary LAeq noise levels recorded ranged between 48.8 dB(A) and 64.4 dB(A). Waste Permit WFP/MH/11/0005/01 specifies a day-time noise emission limit value of 55 dB(A). The noise levels at the front of the site exceeded the waste permit noise levels.

The highest LAeq noise level ie. 64.4 dB (A) was recorded at N1 at the front of the site adjacent to a neighbouring facility. The noise level at this monitoring location is affected by noise from the adjacent facility's chiller units.

The second highest LAeq noise level ie. 57.8 dB (A) was recorded at N2 which is also located at the front of the site. Consequently, the noise level at this monitoring location is most likely affected by noise from traffic visiting the site.

In conclusion, the noise environment that surrounds the monitoring locations is a complex one with several different businesses operating simultaneously which all have an effect on the noise in the immediate area in and around the facility.

Although the day time noise levels recorded at the front site boundary were above the day time Waste Permit limit of LAeq 55 dB (A), the facility is located within a purpose built industrial estate, away from sensitive locations. Consequently, noise emissions from the facility are unlikely to have a negative impact on sensitive locations beyond the site boundary.

### *E.6 Environmental Nuisances*

#### *Bird Control*

Due to the type and nature of the material that is handled at the facility ie. WEEE and batteries, birds are not attracted to the facility and bird nuisance is not an issue at the site.

#### *Dust Control*

Due to the hard road infrastructure within the industrial estate and at the facility, mud or dust nuisance is not an issue at the site. Dust deposition surveys at the site boundary confirms that dust nuisance is not an issue at the site.

#### *Fire Control*

As part of the Company's Health & Safety Management System, fire risk assessments have been conducted across the site. A schedule of training is being developed to ensure that a culture of fire risk and fire prevention is developed within all staff. Regular fire and emergency drills are practiced at the site.

There are 3 fire hydrants at the facility as shown on the site Drainage Map Ref: 12039-LA-01. Fire extinguishers are located throughout the building and an emergency response plan has been developed for the site (see Attachment J).

#### *Litter Control*

Due to the type and nature of the material that is handled at the facility ie. WEEE and batteries, litter is not an issue at the site. However, The Recycling Village Ltd carries out daily site inspections including litter monitoring as part of the site Energy Management System.

#### *Traffic Control*

The site is located within a purpose built Business Park with sufficient access roads and signage. Dedicated staff car parking is provided at the front of the facility. Delivery vehicles access to the site is via the rear delivery yard. Site traffic is managed in accordance with the site EMS procedures. Lorries unload/load in dedicated areas in the yard as shown on the Yard Management Plan Ref: 12039-LA-03.

An average of upto 3 delivery trucks visit the facility daily and an average of 1 delivery truck per day takes material from the facility. The volume of vehicles visiting the facility on a daily basis does not cause any impact on traffic in and around the Business Park.

*Vermin Control*

Due to the type and nature of the material that is handled at the facility ie. WEEE and batteries, vermin are not attracted to the facility and vermin nuisance is not an issue at the site. However, The Recycling Village Ltd uses the services of a specialist vermin control company to regularly replace and remove vermin traps around the facility.

*Road Cleansing*

Due to the hard road infrastructure within the industrial estate and at the facility, and the nature of waste handled, mud or dirty road nuisance is not an issue at the site. However, The Recycling Village Ltd uses a portable road sweeper to regularly clean the yard and keep it free from any mud, dirt and dust.

*Adverse Environmental Impact.*

Previous site emissions and nuisance monitoring carried out at the facility as part of the existing Waste Permit shows that there are no adverse environmental emissions/impacts from the facility.

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