

WASTE RECOVERY SERVICES (FERMOY) LTD.

Licence No. W0107-01

ANNUAL ENVIRONMENTAL REPORT

2008

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1 INTRODUCTION

1.1 Reporting Period

The following is the annual report (AER) for the period January 2008 to December 2008 for the Waste Transfer/Recycling Facility operated by Waste Recovery Services (Fermoy) Ltd. (WRS) at Cullenagh, Fermoy, Co Cork. The contents of this report are as specified in Schedule F of Waste licence W0107-01 granted on 18th of April 2002.

1.2 Waste Activities carried out at the facility

Waste Recovery Services (Fermoy) Ltd. are licenced by the Environmental Protection Agency to carry out waste activities in the operation of a non-hazardous waste transfer station. The facility is licensed to accept up to 6,500 tonnes per-annum of non hazardous waste (commercial, industrial and construction and demolition waste). Hazardous or liquid wastes are not accepted at this facility.

In pursuance of the powers conferred on it by the Waste Management Act, 1996, the Environmental Protection Agency (the Agency) under Section 40(1) of the said Act granted Waste Licence W107-01 to Waste Recovery Services (Fermoy) Limited to carry on the waste activities listed below at Cullenagh, Fermoy, Co. Cork subject to conditions contained in the licence. These activities are as specified in the third and fourth schedules of the Waste management Act, 1996 (see Tables 1.1 and 1.2).

Third Schedule

Class 12. Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.

This activity is limited to the transfer of non-recoverable waste into jumbo skips for transfer to landfill.

Class 13. Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

This activity is limited to the temporary storage of non-recoverable wastes prior to dispatch to landfill.

Table 1.1 Licensed Waste Recovery Activities, in accordance with the Third Schedule of the Waste Management Act 1996

Fourth Schedule**Class 3. Recycling or reclamation of metals and metal compounds:**

This activity is limited to the recovery and temporary storage of metal waste separated from waste accepted at the facility.

Class 4. Recycling or reclamation of other inorganic materials:

This activity is limited to the recovery and temporary storage of timber waste and of construction and demolition wastes accepted at the facility.

Class 13. 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:

This activity is limited to the storage of materials on site prior to recovery at the facility or removal to a recovery facility off-site

Table 1.2 Licensed Waste Disposal Activities, in accordance with the Fourth Schedule of the Waste Management Act 1996

1.3 Site Infrastructure & Development**1.3.1 Site Infrastructure**

The waste management facility comprises a site office, weighbridge, process sheds, workshop and temporary storage areas as well as a waste water and storm water management system.

The operations section of the site is separated into 3 sections:

1. Waste transfer area.
2. Construction & Demolition area.
3. Timber Segregation & Shredding area.

1.3.2 Waste Handling & Processing Capacity

As outlined the site is divided into 3 No. Sections, with the duty and standby equipment for each of the 3 No. sections outlined in Tables 1.3, 1.4 and 1.5 below.

1.4 Waste Transfer Area:

The duty equipment on-site (Loaders) can handle 16 tonnes per hour, or 150 tonnes daily, The two Volvo Hook Loader trucks can each carry 14 tonnes per load and can carry out three runs each on a daily basis, giving a total maximum daily transfer capacity is 84 tonnes.

There is an additional 42 tonnes per day capacity in the standby equipment. In the event of breakdown, adequate provision of spare parts available from local suppliers/dealers, a fully equipped garage on-call and truck/equipment hire available with minimum notice

Duty Equipment	Standby Equipment
2 x Volvo Hook Loader Truck	1 x Volvo Hook Loader
Komatsu 13 Ton Excavator (Note we have two of these excavators)	Komatsu 13 Ton Excavator
6 x 40 cubic yard jumbo skips	1x 40 cubic yard jumbo skips

Table 1.3 Equipment in Waste Transfer Area

1.5 Construction & Demolition Area:

The Extec Finger Screener & Picking station has a through output of 480 tonnes per day. The Hook loaders or Hired contractors can handle 10 runs each per day of processed rubble to local permitted sites, which equates to a total of 200 tonnes per day. The standby equipment would have an additional 100 tonnes capacity per day.

Duty Equipment	Standby Equipment
Extec – Finger Screener & LJH – Mobile Picking Station	Viper 122 Screener or Similar equipment available for hire at short notice
Manitou Telescopic loader.	Komatsu 14 tonne loader
1 x Volvo Hook loader	1 x Volvo Hook loader or Hired Contractors
1 x 20 cubic yard jumbo rubble skips	1 x 20 cubic yard jumbo rubble skips

Table 1.4 Equipment in Construction & Demolition Area

1.6 Timber Segregation & Shredding Area:

The Hass wood shredder has a through output of 400 tonnes of wood and up to 400 tonnes of Green waste per day. The transportation of shredded timber is organized as required, the only constraint being the opening hours of the recycling plant to which the material is delivered. The standby capacity of the Hired equipment would have the same output. The Doppstadt high speed wood shredder has a through output of 120 tonnes of wood and up to 64 tonnes of Green waste per day. The standby capacity of the Hired equipment would have the same output.

Duty Equipment	Standby Equipment
Komatsu 13 Ton Excavator (Note we have two of these excavators)	Komatsu 13 Ton Excavator
Komatsu 14 tonne loader	Manitou Telescopic loader
Hass. Mobile Double Shaft Primary Crusher. Model HDWV – D 700 / 2000	Similar equipment available for Hire.
Doppstadt High speed wood shredder Model AK 230	Similar equipment available for Hire.

Table 1.5 Equipment in Timber Segregation & Shredding area

When the capacity of the equipment on-site and on-standby is considered on an annual (300 working day) basis, it can be seen that the capacities to handle waste are well in excess of the capacities specified in the waste licence (See Table 1.6). The quantity of timber is referred to as “Combination of the above figures” in Table 1.6, as it makes up a component of both the Commercial & Industrial and Construction & Demolition waste.

Therefore the facility is more than capable of clearing any backlog that could arise due to unforeseen circumstances.

Waste type	Licensed Tonnage (annual)	Licensed Tonnage (daily)	Duty Equipment	Standby Equipment
Commercial & Industrial	4700	15.66	84 tonnes per day	42 tonnes per day
Construction & Demolition	1800	6.0	200 tonnes per day	100 tonnes per day
Timber	Combination of the above figures	Combination of the above figures	360 / 240 tonnes per Day	Same

Table 1.6 Annual (300 day) equipment capacity in relation to licenced throughput

2 WASTE ACTIVITIES

The waste categories and quantities which can be accepted at the Facility are outlined in Schedule A (Table 2) of the waste licence (See Table 2.1)

Waste Type	Maximum Tonnes Per annum
Commercial	3000
Industrial	1700
Construction and Demolition	1800
Total	6500

Table 2.1 Waste types and quantities permitted by waste licence

This information is commercially sensitive. If you require further details please contact Adrian Dunlea of Waste Recovery Services on 025-31055 with your name, company name, address and email and telephone numbers and we will respond to all queries within 14 Days.

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3 SUMMARY OF RESULTS AND INTERPRETATION OF ENVIRONMENTAL DATA

3.1 Groundwater monitoring in 2008

The quarterly groundwater monitoring data for 2008 is presented in Table 1. The data follows generally the same trends as in previous years. Any differences or notable outlying values are highlighted in Table 1 in bold red print.

The pH values show little change between 2006 and 2008. The pH at BH3 has seen a small decrease in Q3 and Q4 in 2008 from ~5.6 to ~5.0 however this has not been accompanied by and associated In change in other parameters. The pH levels at all other groundwater monitoring sites remained almost constant throughout the year. At the Riordan residence, the use of a water treatment system would account for the higher pH and potassium levels found in the kitchen tap sample (pH 7.28, 178mg/L, K) compared to the outdoor tap sample (pH 5.13, 1.34mg/L, K) in Q3 2008.

Ammonia levels at BH1 have continued to exceed the guideline limits ranging from 0.39 – 0.98 mg/l in 2008. However, this marks a continual improvement on the excessive levels in Q4 2007 (7.1 mg/l, N). BH1 historically has had slightly higher ammonia levels but not by the degree we are currently observing. Ammonia levels at other sites remain within the guideline limits.

In Quarter 2 there were elevated levels of total coliforms at all sites, especially in Dunlea's and Coughlan's wells with >2420 and 2420 cfu per 100ml respectively. In addition Dunlea had faecal coliform levels above the guideline limits of 0 cfu per 100ml in 3 out of 4 quarters. The other sites, except during quarter 2 had generally much lower levels of coliform contamination. The poor record for Dunlea in 2008 continues a record of intermittently elevated levels at this site over the years, suggesting that a source of contamination exists close to this well

Potassium : Sodium ratios greater than 0.3-0.4 indicate possible contamination from organic waste sources, e.g. farmyard waste. In Q2 2008 the BH1 site had a K:Na ratio of 0.9 suggesting possible organic contamination. For the same period the Dunlea well has a ratio of 0.34

The off-site wells (Coughlan's, Riordan's and O'Leary's) generally have the highest water quality of those tested.

Table 3.1: Summary of quarterly groundwater monitoring data for Quarter 1 – Quarter 4 2008

3.1.1 Quarter 1 (Feb 08)	BH1	BH3	Dunlea	Riordan	Coughlan	O'Leary	Drinking Water	EPA (IGV)
pH	5.5	5.6	5.8	7.4	5.0	5.6	6.5-9.5	6.5-9.5
Temperature (°C)	10.8	11.6	10.8	10.8	10.6	9.7	25	25
Conductivity (µS/cm)	546	410	769	676	132	108	2500	1000
Dissolved Oxygen %sat	22	98	6	9.7	50.8	79.2	no abnormal change	no abnormal change
Ammonia (mg/l, N)	0.66	<0.2	<0.2	0.2	<0.2	<0.2	0.3	0.15
Total coliforms (cfu/100mls)	<1	37	461	3	5	<1	0	0
Faecal coliforms (cfu/100ml)	<1	<1	1	<1	<1	<1	0	0
Manganese (µg/l)	3842	116	2122	734	68	12	50	50
Copper (µg/l)	3	1	2	33	5	76	200	30
Zinc (µg/l)	20	17	30	62	20	105	5000	100
3.1.2 Quarter 2 (Jun 08)	BH1	BH3	Dunlea	Riordan	Coughlan	O'Leary	Drinking Water	EPA (IGV)
pH	5.4	5.6	5.7	5.4	5.1	5.7	6.5-9.5	6.5-9.5
Temperature (°C)	13.1	13.5	12.6	14.8	14.5	14.5	25	25
Conductivity (µS/cm)	514	406	816	119	110	97	2500	1000
Dissolved Oxygen %sat	57.5	79	32	57.5	57	35	no abnormal change	no abnormal change
Ammonia (mg/l, N)	0.98	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	0.15
Total coliforms (cfu/100mls)	78	6	>2420	21	2420	4	0	0
Faecal coliforms (cfu/100ml)	<1	<1	187	<1	4	<1	0	0
Manganese (µg/l)	nt	nt	nt	nt	nt	nt	50	50
Copper (µg/l)	3.8	3.9	20.3	76.5	9.8	38.1	200	30
Zinc (µg/l)	10.4	20.9	92.9	109.2	17.8	122.8	5000	100

nt = not tested; nr = no result

Table 3.1 contd:

3.1.3 Quarter 3 (Sept 08)	BH1	BH3	Dunlea	Riordan	Coughlan	O'Leary	Drinking Water	EPA (IGV)
pH	5.42	5.18	5.94	5.13	5.48	5.68	6.5-9.5	6.5-9.5
Temperature (°C)	11.6	11.6	15.5	13.3	11.2	12.2	25	25
Conductivity (µS/cm)	493	393	821	149	217	111	2500	1000
Dissolved Oxygen %sat	62	81	28	20	61	90	no abnormal change	no abnormal change
Ammonia (mg/l, N)	0.39	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	0.15
Total coliforms (cfu/100mls)	<1	19	153	nt	3	10	0	0
Faecal coliforms (cfu/100ml)	<1	<1	2	<1	<1	<1	0	0
Manganese (µg/l)	nt	nt	nt	nt	nt	nt	50	50
Copper (µg/l)	1.52	1.65	5.85	27.4	10.9	109	200	30
Zinc (µg/l)	<5	9.1	24.1	42.4	19.7	230	5000	100
3.1.4 Quarter 4 (Dec 08)	BH1	BH3	Dunlea	Riordan	Coughlan	O'Leary	Drinking Water	EPA (IGV)
pH	5.28	5.02	5.66	5.24	5.02	5.45	6.5-9.5	6.5-9.5
Temperature (°C)	11.3	11	10.3	6.8	9.3	9.3	25	25
Conductivity (µS/cm)	525	400	844	151	183	108	2500	1000
Dissolved Oxygen %sat	72	71	14	25	53	76	no abnormal change	no abnormal change
Ammonia (mg/l, N)	0.66	<0.2	<0.2	<0.2	<0.2	<0.2	0.3	0.15
Total coliforms (cfu/100mls)	4	<1	687	<1	2	9	0	0
Faecal coliforms (cfu/100ml)	<1	<1	20	<1	<1	1	0	0
Manganese (µg/l)	nt	nt	nt	nt	nt	nt	50	50
Copper (µg/l)	1.48	1.65	10.6	362	12.8	106	200	30
Zinc (µg/l)	<5	10.1	10.5	93.5	61.7	153	5000	100

nt = not tested; nr = no result

3.2 Foul Water

Table 2 presents the results of the 2008 foul water monitoring runs. Parameters covered by the licence include temperature, pH, BOD, suspended solids, oils, fats & grease and ammonia.

Except for one exceedence in the case of oils, fats & grease in Q3, foul water results are all below the licensed levels for each parameter.

Parameter	Q1	Q2	Q3	Q4	License Limits
pH	7.06	nr	7.57	7.51	6-10
Temperature (°C)	nt	nt	nt	nt	nt
BOD (mg/l)	956	270	984	537	3,000
Suspended Solids (mg/l)	200	177	1130	68	2,000
Oils, fats & grease (mg/l)	<1	<1	289	15	100
Ammonia (mg/l, N)	11.01	7.23	81.7	52.3	100

nt = not tested; nr = no result

Table 3.2 Foul water monitoring results for 2008 (Q1-Q4)

3.3 Percolation Area

The waste licence requires quarterly monitoring of the percolation area for BOD, suspended solids and mineral oils.

The results (Table 3.3) show full compliance with the licensed limits in 2008

Parameter	Q1	Q2	Q3	Q4	License Limits
BOD (mg/l)	0.7	nt	3.5	2.1	25
Suspended Solids (mg/l)	0	nt	3.3	1.2	35
Mineral oil (mg/l)	nt	nt	<0.01	<0.01	5

nt = not tested; nr = no result **Table 3.3 Percolation Area Results for 2008**

3.4 Dust

Dust at the site is monitored at 3 No. locations as specified by the EPA. The limit for dust deposition at the site is 350 mg/m²/day. This limit was breached during 2008. Dust monitoring was carried out over the following periods during 2008;

- May - June
- July - August
- August - September

The above periods were chosen in order to reflect the driest conditions and correspond with shredding operations. The dust report is attached for further information, see Appendix II

Monitoring Point	Period		
	May - June	Jul - Aug	Aug -Sept
	Dust Deposition (mg/m ² /day)		
Site 1	239.9	269.9	421.4
Site 2	490.6	653.6	235.5
Site 3	510.1	171.1	154.6

Table 3.4 Dust Results for 2008

3.5 Noise

An annual noise survey was carried out on 10th July 2008. Recorded noise levels at MP1 and MP2 are summarised below and show that the recorded noise levels were below the licence limit of 55 dBA.

Location	Sound pressure Levels dB(A) L _{Aeq} (30 Minutes)	Limit
MP1	51.4	55
MP2	48.4	55

Table 3.5 Noise monitoring results and averages for 2008

3.6 Review of nuisance controls

Nuisance controls are reviewed on weekly bases.

4 REPORTED INCIDENTS AND COMPLAINTS

There have been no reportable incidents or complaints received over the last 12 months from January 1st to December 31st 2008

5 RESOURCE AND ENERGY CONSUMPTION

The main resources consumed at the facility during the reporting period were electricity, diesel, lubricants and water. A summary of the significant resources consumed is tabulated below (See Table 5.1 and Table 5.2) with a summary of the principal resource consumption.

Area of Use	Purpose	Principal Resource Consumed
Site Plant/Vehicles	Placement and processing of Waste	Diesel, Lubricants
Site Operations	Control Of Dust	Water
Offices and Sheds	Management of Yard and The facility management	Electricity and Water

Table 5.1 Principal areas of energy and resources usage January 2008 – December 2008

Resource	Consumption for Reporting Period '2008	Consumption for previous year '2007	Increase / Decrease (%)
<i>Site Management</i>			
Electricity	39,584 Units	34,988 Units	4,596 Units (13.14%)
Water	1.7 M litres (estimated)	1.7 M litres (estimated)	0 (estimated)
<i>Site Plant / Vehicles</i>			
Diesel	224,101.35 litres	237,191.60 litres	13090.60 litres (-5.52%)
Lubricants	3,538 litres	2,200 litres	1338 litres (60.82%)

Table 5.2 Available data on quantities of Energy and Resources used for January 2008 – December 2008

6 ENVIRONMENTAL OBJECTIVES & TARGETS FOR 2007

Project	Status
1. Dust Emissions / Monitoring	On going
2. Noise Emissions / Monitoring	On going
3. Ground Water / Monitoring	On going
4. Foul Water / Monitoring	On going
5. Air Separation Technologies	Completed

Table 6.2 Progress on Objectives for site improvement for 2007

7 ENVIRONMENTAL OBJECTIVES & TARGETS FOR 2008

Objective	Target	Responsibility	Timescale
Assess and reduce where possible all dust emissions.	Not to exceed 350 mg/m ² /day in order to reduce the possibility of causing dust deposition nuisance beyond site boundary.	Adrian Dunlea	Ongoing
Assess and reduce where possible all site noise emissions.	Not to exceed 55 db(a) L _{AEq} (30 minutes) during day time and not to exceed 45 db(a) L _{AEq} (30 minutes) during night at noise monitoring locations in order to reduce the possibility of causing noise nuisance at noise sensitive locations beyond the site boundary.	Adrian Dunlea	Ongoing
Assess and monitoring groundwater quality at the site and in the immediate vicinity of the site	No pollution of groundwater due to site activities.	Adrian Dunlea	Ongoing
Assess and monitoring waste water emissions from the site.	Compliance with emission limits as required by schedule C4 of W0107-01.	Adrian Dunlea	Ongoing
Submit an application for a waste licence review	To increase the amount of waste that can be accepted on site	Adrian Dunlea	Completed Feb 2009

Table 6.2 Objectives and Targets for 2008

8 NEW PROCEDURES PUT IN PLACE DURING 2008

No new procedures were put in place during 2008

9 MANAGEMENT AND STAFFING STRUCTURES

The management and staffing structures in place at WRS (see Figure 7.1) ensures clear communication of environmental policy and responsibility for environmental management on-site. A critical part of this management system is the provision of health and safety and environmental training to all staff members to ensure that all staff members from management to operatives are aware of their responsibilities and best practice to ensure the firm meets its environmental obligations.

Position	Name
General Manager	John Dunlea
Facility Manager / Site Manager / Environmental Manager	Adrian Dunlea
Deputy Facility Manager / Administration / Logistics	Shane Dunlea
Logistics	Ronan Dunlea

Table 7.1 Management and staffing structures at Waste Recovery Services (Fermoy) Ltd.

10 PUBLIC INFORMATION PROGRAMME

WRS have developed and implemented a communications procedure as part of the site EMS. In accordance with condition 2.4 of the waste licence, this procedure ensures that members of the public can obtain relevant information, at all reasonable times, concerning the environmental performance of the facility.

11 FINANCIAL PROVISION

An environmental liabilities risk assessment and site closure report have been prepared and submitted to the Agency. These reports contain proposals for financial provision which have been agreed by the Agency.

Adrian Dunlea

Environmental Manager

Waste Recovery Services (Fermoy) Ltd.

Appendix 1

Annual Ground Water Results 2008

Appendix 2

Annual Dust Monitoring Report for 2008