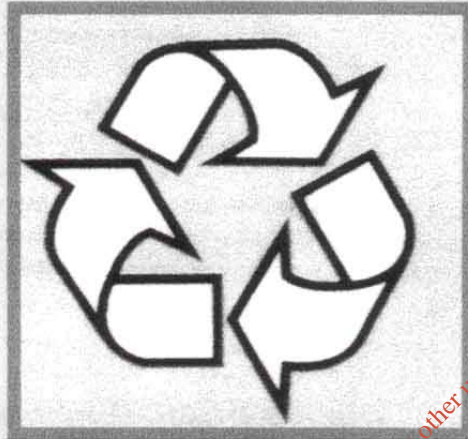


WASTE RECOVERY SERVICES  
(FERMOY) LTD



WASTE LICENCE REF: 107-1

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SITE EMISSIONS REPORT  
Q 2  
October 2005

Prepared by:

**WOOD ENVIRONMENTAL MANAGEMENT LTD**  
ENVIRONMENTAL MANAGEMENT CONSULTANTS

1 Castle Grove, Kilgobbin Wood, Sandyford, Dublin 18  
Tel: 087-2854171. Fax: 01-2945613  
E-mail: [awood@weml.ie](mailto:awood@weml.ie) Web Site: [www.weml.ie](http://www.weml.ie)

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**1. Introduction.**

- 1.1 Waste Recovery Services (Fermoy) Ltd (WRS) commissioned WEML to carry out emissions monitoring at their EPA licensed facility at Cullenagh, Fermoy, Co Cork, as required under waste licence no: 107-1.
- 1.2 Schedule D of waste licence 107-1 requires WRS to carry out the following emissions monitoring.

*Table 1. Waste Licence Monitoring Requirements.*

<b>Emission source &amp; Ref</b>	<b>Frequency</b>	<b>Parameter</b>
Groundwater	Monthly	Level
Groundwater	Quarterly	pH, temperature, conductivity, dissolved oxygen, ammoniacal nitrogen
Percolation Area	Quarterly	BOD, SS, mineral oils
Foul Water	Quarterly	Temperature, pH, BOD, COD, SS, detergents, fats/oil/grease, ammoniacal nitrogen
Dust	Three times a year	mg/m <sup>2</sup> /day
Noise	Annually	L(A) <sub>eq</sub> dBA
Groundwater	Annually	Heavy metals, List I/II organic substances, TOC, TQN, TPH, total phosphorus, faecal coliforms, total coliforms

- 1.3 WEML carried out emissions monitoring for the second 2005 quarterly sampling programme on 12<sup>th</sup> September 2005. The results are presented in the following report.



## 2. Results.

### 2.1 Quarterly Groundwater Results.

2.1.1 Schedule D5 requires quarterly monitoring of groundwater quality at boreholes and private wells. WEML took field readings of pH, temperature and conductivity using a Dr Lange portable water meter. Other analysis was carried out by a third party laboratory. The results are tabulated below.

Table 2. Quarterly Groundwater Monitoring Results (Q2 2005).

Borehole Ref	Level (m)	Temp (°C)	pH	Cond (µs/cm)	DO (mg/l)	Amm Nitrogen (mg/l)
BH 1	5.83	11.9	5.12	580	9.4	<0.2
Rear BH	6.13	Measurements not required				
BH 3	6.93	11.7	5.03	180	8.9	<0.2
Dunlea Well	7.31	12.5	6.03	620	8.0	<0.2
Reardon Well	NR*	13.8	5.66	133	8.4	<0.2
Coughlan Well	4.60	12.1	7.57	630	9.1	<0.2
O'Leary Well	2.92	13.1	5.92	102	9.1	<0.2

\*NR- No record. Well blocked.

2.1.2 The next quarterly groundwater sampling is scheduled for December 2005.

### 2.2 Quarterly Percolation Area Groundwater Results.

2.2.1 Schedule D4 requires quarterly monitoring of groundwater quality at the percolation area for BOD, suspended solids and mineral oils. Analysis was carried out by a third party laboratory. The results are tabulated below.

Table 3 Quarterly Percolation Area Groundwater Monitoring Results (Q2 2005).

Borehole Ref	No. Samples	BOD	SS	Mineral Oils
P1	1	4 mg/l	<10 mg/l	<10 µg/l
<i>Licence Limits</i>		<i>25 mg/l</i>	<i>35 mg/l</i>	<i>5 mg/l</i>

2.2.2 The above results show compliance with the licence conditions.

2.2.3 The next quarterly percolation area groundwater quality sampling is scheduled for September 2005.



### 2.3 Quarterly Foul Water Results.

2.3.1 Schedule D6 requires quarterly monitoring of foul water emissions for pH, temperature, BOD, COD, suspended solids, detergents, fats/oils/grease and ammoniacal nitrogen. The results are tabulated below.

Table 4. Quarterly Foul Water Monitoring Results (Q1 2005).

Sampling Ref	Temp (°C)	pH	BOD (mg/l)	COD (mg/l)	Sus Solids (mg/l)	Detergents (mg/l)	Fats, Oils, Grease (mg/l)	Amm Nitrogen (mg/l)
FW 1	20.1	8.68	21	102	<10	0.2	<1	11.1
Grab Sample Licence Limits	42 °C	6-10	3,000	NL*	2,000	NL*	100	100

\*NL - No licence limit set

2.3.2 The above results show compliance with the licence conditions.

2.3.3 The next quarterly foul water quality sampling is scheduled for December 2005.

### 2.4 Dust Deposition Results.

2.4.1 Schedule D2 requires dust deposition monitoring to be carried out three times a year, twice during the period May to September, and at least once during timber shredding operations.

2.4.2 WEML placed dust deposition monitors at the three agreed site locations on 9<sup>th</sup> June 2005. The monitors were collected on 8<sup>th</sup> July 2005. The results are presented below.

Table 5 Dust Deposition Results (June-July 2005).

Location	Solids (mg/l)	Total Volume (l)	Total Solids/sample (mg)	Dust Deposition (mg/m <sup>3</sup> /d)	Licence Limit(mg/m <sup>3</sup> /d)
D1	<10	4.5	<45	30.61	350
D2	<10	4.0	<45	30.61	350
D3	15	5.0	75	51.02	350

2.4.3 The above results show compliance with the licence conditions.

2.4.4 WEML placed dust deposition monitors at the three agreed site locations on 8<sup>th</sup> July 2005. The monitors were collected on 12<sup>th</sup> September 2005. Timber shredding operations were carried out during the monitoring period. The results are presented below.

Table 6 Dust Deposition Results (July-September 2005).

Location	Solids (mg/l)	Total Volume (l)	Total Solids/sample (mg)	Dust Deposition (mg/m <sup>3</sup> /d)	Licence Limit(mg/m <sup>3</sup> /d)
D1	52	5.0	250	77.30	350
D2	<10	5.0	<50	<15.46	350
D3	<10	5.0	<50	<15.46	350

2.4.5 The above results show compliance with the licence conditions.

2.4.6 The next dust deposition sampling programme is scheduled for March 2006.

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# APPENDIX 1

## Laboratory Certificates

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- Interim
- Validated

## ALcontrol Laboratories Ireland

### Table Of Results

**Ref Number: 05-B04835/01**

Client: WEML (Dublin)

Date of Receipt: 13/09/05  
(of first sample)

**Sample Type: WATER**

Location:

Client Contact: Andy Wood

Client Ref: WRS

Detection Method			5 DAY ATU	GC FID/CALC	GRAVIMETRIC	IR	MBAS	METER	SPECTRO	SPECTRO								
Method Detection Limit			<2mg/l	<10ug/l	<10mg/l	<1mg/l	<0.2mg/l	<0.1mg/l	<0.2mg/l	<15mg/l								
UKAS Accredited			✓	✓	✓				✓	✓								
Alcontrol Reference	Sample Identity	Other ID	BOD	Mineral Oil by GC	Total Suspended Solids	Oils, Fats & Greases (Dissolved)	Surfactants	Dissolved Oxygen	Ammoniacal Nitrogen as N	CO <sub>2</sub> Settled								
			mg/l	ug/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l							
05-B04835-S0003	WRS BH1	UNKNOWN	-	-	-	-	-	8.4	<0.2	-								
05-B04835-S0004	WRS BH2	UNKNOWN	-	-	-	-	-	8.0	<0.2	-								
05-B04835-S0005	WRS BH3	UNKNOWN	-	-	-	-	-	8.9	<0.2	-								
05-B04835-S0006	WRS COUGHLAN	UNKNOWN	-	-	-	-	-	9.1	<0.2	-								
05-B04835-S0007	WRS REARDON	UNKNOWN	-	-	-	-	-	8.4	<0.2	-								
05-B04835-S0008	WRS O'LEARY	UNKNOWN	-	-	-	-	-	9.1	<0.2	-								
05-B04835-S0009	WRS PERC	UNKNOWN	4	<10	<10	-	-	-	-	-								
05-B04835-S0010	WRS FOUL	UNKNOWN	21	-	<10	-	0.2	-	11.1	102								
05-B04835-S0011	WRS D1	UNKNOWN	-	-	52	-	-	-	-	-								
05-B04835-S0012	WRS D2	UNKNOWN	-	-	<10	-	-	-	-	-								
05-B04835-S0013	WRS D3	UNKNOWN	-	-	<10	-	-	-	-	-								

**Notes :** METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

**NDP** = NO DETERMINATION POSSIBLE

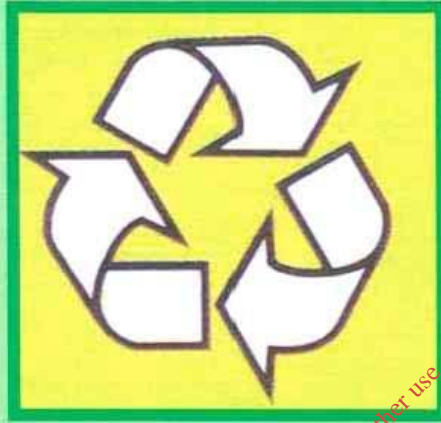
THE DATA ON THIS PRELIMINARY REPORT IS NOT VALIDATED AND MAY BE SUBJECT TO CHANGE.

Checked By : Lita Foley

Printed at 10:15 on 13/10/05

\* SUBCONTRACTED TO OTHER LABORATORY / \*\* SAMPLES ANALYSED AT THE CHESTER LABORATORY

# WASTE RECOVERY SERVICES (FERMOY) LTD



WASTE LICENCE REF: 107-1

## SITE EMISSIONS REPORT

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2005

Prepared by:

WOOD ENVIRONMENTAL MANAGEMENT LTD  
ENVIRONMENTAL MANAGEMENT CONSULTANTS

1 Castle Grove, Kilgobbin Wood, Sandyford, Dublin 18  
Tel: 087-2854171 Fax: 01-2945613  
E-mail: [awood@weml.ie](mailto:awood@weml.ie) Web Site: [www.weml.ie](http://www.weml.ie)



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Table 4	Quarterly Foul Water Results

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Appendix 1	Laboratory Certificates
Appendix 2	Noise Monitoring Results

**1. Introduction.**

- 1.1 Waste Recovery Services (Fermoy) Ltd (WRS) commissioned WEML to carry out emissions monitoring at their EPA licensed facility at Cullenagh, Fermoy, Co Cork, as required under waste licence no: 107-1.
- 1.2 Schedule D of waste licence 107-1 requires WRS to carry out the following emissions monitoring.

*Table 1. Waste Licence Monitoring Requirements.*

<b>Emission source &amp; Ref</b>	<b>Frequency</b>	<b>Parameter</b>
Groundwater	Monthly	Level
Groundwater	Quarterly	pH, temperature, conductivity, dissolved oxygen, ammoniacal nitrogen
Percolation Area	Quarterly	BOD, SS, mineral oils
Foul Water	Quarterly	Temperature, pH, BOD, COD, SS, detergents, fats/oil/grease, ammoniacal nitrogen
Dust	Three times a year	mg/m <sup>2</sup> /day
Noise	Annually	L(A) <sub>eq</sub> dBA
Groundwater	Annually	Heavy metals, List I/II organic substances, TOC, TDS, TPH, total phosphorus, faecal coliforms, total coliforms

- 1.3 WEML carried out emissions monitoring for the third 2005 quarterly sampling programme on 8<sup>th</sup> December 2005. The results are presented in the following report.

## 2. Results.

### 2.1 Quarterly Groundwater Results.

2.1.1 Schedule D5 requires quarterly monitoring of groundwater quality at boreholes and private wells. WEML took field readings of pH, temperature and conductivity using a Dr Lange portable water meter. Other analysis was carried out by a third party laboratory. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 2. Quarterly Groundwater Monitoring Results (Q3 2005).

Borehole Ref	Level (m)	Temp (°C)	pH	Cond (µs/cm)	DO (mg/l)	Amm Nitrogen (mg/l)
BH 1	4.33	10.8	5.70	390	4.9	<0.2
Rear BH	4.04	Measurements not required				
BH 3	5.90	11.0	5.16	210	5.6	<0.2
Dunlea Well	6.09	10.9	6.12	670	4.0	<0.2
Reardon Well	NR*	10.0	5.34	150	4.8	<0.2
Coughlan Well	3.10	10.7	5.23	195	4.9	<0.2
O'Leary Well	2.45	10.6	5.71	104	5.9	<0.2

\*NR- No record. Well blocked.

2.1.2 The next quarterly groundwater sampling is scheduled for March 2006.

### 2.2 Quarterly Percolation Area Groundwater Results.

2.2.1 Schedule D4 requires quarterly monitoring of groundwater quality at the percolation area for BOD, suspended solids and mineral oils. Analysis was carried out by a third party laboratory. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 3 Quarterly Percolation Area Groundwater Monitoring Results (Q3 2005).

Borehole Ref	No. Samples	BOD	SS	Mineral Oils
P1	1	5 mg/l	<10 mg/l	<10 µg/l
<i>Licence Limits</i>		<i>25 mg/l</i>	<i>35 mg/l</i>	<i>5 mg/l</i>

2.2.2 The above results show compliance with the licence conditions.

2.2.3 The next quarterly percolation area groundwater quality sampling is scheduled for March 2006.



### 2.3 Quarterly Foul Water Results.

2.3.1 Schedule D6 requires quarterly monitoring of foul water emissions for pH, temperature, BOD, COD, suspended solids, detergents, fats/oils/grease and ammoniacal nitrogen. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 4. Quarterly Foul Water Monitoring Results (Q3 2005).

Sampling Ref	Temp (°C)	pH	BOD (mg/l)	COD (mg/l)	Sus Solids (mg/l)	Detergents (mg/l)	Fats, Oils, Grease (mg/l)	Amm Nitrogen (mg/l)
FW 1	5.56	7.82	9	85	17	0.4	<1	14.6
Grab Sample Licence Limits	42 °C	6-10	3,000	NL*	2,000	NL*	100	100

\*NL - No licence limit set

2.3.2 The above results show compliance with the licence conditions.

2.3.3 The next quarterly foul water quality sampling is scheduled for March 2006.

### 2.4 Dust Deposition Results.

2.4.1 Schedule D2 requires dust deposition monitoring to be carried out three times a year, twice during the period May to September, and at least once during timber shredding operations.

2.4.2 Dust sampling has been carried out during the periods June-July and July-September 2005. Results are presented in previous reports.

2.4.3 The next dust deposition sampling programme is scheduled for March 2006.

### 2.5 Annual Noise Monitoring Results.

2.5.1 Schedule D3 requires annual noise at 2 locations. The results are presented in Appendix 2.

# APPENDIX 1

## Laboratory Certificates

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- Interim
- Validated

## ALcontrol Laboratories Ireland

### Table Of Results

**Ref Number: 05-B06768/01**  
 Client: WEML (Dublin)  
 Date of Receipt: 09/12/05  
 (of first sample)

**Sample Type: WATER**  
 Location:  
 Client Contact: Andy Wood  
 Client Ref: WRS

ALcontrol Reference	Sample Identity	Other ID	Detection Method	5 DAY ATU	GC FID/CALC	GRAVIMETRIC	METER	SPECTRO													
			Method Detection Limit	<2mg/l	<10ug/l	<10mg/l	<0.1mg/l	<0.2mg/l													
			UKAS Accredited	✓	✓	✓		✓													
			BOD	Mineral Oil by GC	Total Suspended Solids	Dissolved Oxygen	Ammoniacal Nitrogen as N														
			mg/l	ug/l	mg/l	mg/l	mg/l														
05-B06768-S0011	BH1	UNKNOWN	-	-	-	4.9	<0.2														
05-B06768-S0012	BH2	UNKNOWN	-	-	-	4.0	<0.2														
05-B06768-S0013	BH3	UNKNOWN	-	-	-	5.6	<0.2														
05-B06768-S0014	REARDON	UNKNOWN	-	-	-	4.8	<0.2														
05-B06768-S0015	COUGHLAN	UNKNOWN	-	-	-	4.9	<0.2														
05-B06768-S0016	O'LEARY	UNKNOWN	-	-	-	4.9	<0.2														
05-B06768-S0017	PERC	UNKNOWN	5	<10	<10	-	-														

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Checked By \_\_\_\_\_ Ann-Marie Rutledge





## APPENDIX 2

### Noise Monitoring Results

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ENVIRONMENTAL NOISE SURVEY

Site: WRS Fermoy  
Date: 8<sup>th</sup> December 2005

Location	Description	Weather	Time Start	Duration	L1	L10	L50	L90	L99	LEQ	Comments
NP 2	O'Reardon House	Dry, overcast	11:00	30 mins	69.4	48.1	41.5	39.4	37.9	56.5	Site operational. Noise from passing traffic.
NP1	Site Entrance	Dry, overcast	11:45	30 mins	69.7	56.0	36.7	31.5	29.6	57.0	Site operational. Shredding operations being carried out.

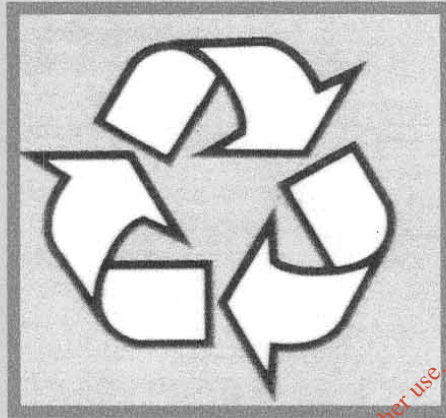
Location	Trucks	Cars	Vans	Tractor	Motorbike	Trucks In/Out Site
NP 2		6				
NP 1		14	2	1		3

Location	1Khz	2Khz	4Khz	8Khz	16Khz	31.5Khz	62.5Khz	125Khz	250Khz	500Khz
NP2	60.4	31.7	20.9	24.9	25.4	49.2	46.5	44.1	38.4	39.1
NP1	33.6	51.5	45.2	36.5	24.1	52.9	50.3	42.5	30.7	35.8

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WEML

WASTE RECOVERY SERVICES  
(FERMOY) LTD



WASTE LICENCE REF: 107-1

SITE EMISSIONS REPORT  
2006 Annual & Q1  
February 2006

Prepared by:

WOOD ENVIRONMENTAL MANAGEMENT LTD  
ENVIRONMENTAL MANAGEMENT CONSULTANTS

1 Castle Grove, Kilgobbin Wood, Sandyford, Dublin 18  
Tel: 087-2854171. Fax: 01-2945613  
E-mail: awood@weml.ie. Web Site: www.weml.ie

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Table 4	Quarterly Percolation Area Groundwater Results
Table 5	Quarterly Foul Water Results

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**1. Introduction.**

- 1.1 Waste Recovery Services (Fermoy) Ltd (WRS) commissioned WEML to carry out emissions monitoring at their EPA licensed facility at Cullenagh, Fermoy, Co Cork, as required under waste licence no: 107-1.
- 1.2 Schedule D of waste licence 107-1 requires WRS to carry out the following emissions monitoring.

*Table 1. Waste Licence Monitoring Requirements.*

<b>Emission source &amp; Ref</b>	<b>Frequency</b>	<b>Parameter</b>
Groundwater	Monthly	Level
Groundwater	Quarterly	pH, temperature, conductivity, dissolved oxygen, ammoniacal nitrogen
Percolation Area	Quarterly	BOD, SS, mineral oils
Foul Water	Quarterly	Temperature, pH, BOD, COD, SS, detergents, fats/oil/grease, ammoniacal nitrogen
Dust	Three times a year	mg/m <sup>2</sup> /day
Noise	Annually	L(A) <sub>eq</sub> dBA
Groundwater	Annually	Heavy metals, TOC, TON, TPH, total phosphorus, faecal coliforms, total coliforms

- 1.3 WEML carried out emissions monitoring for the annual groundwater and first 2006 quarterly groundwater, foul water and percolation area sampling programme on 11<sup>th</sup> January 2006. The results are presented in the following report.

**2. Results.**

*2.1 Annual Groundwater Results.*

2.1.1 Schedule D5 requires annual monitoring of groundwater quality at boreholes and private wells. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

*Table 2. Annual Groundwater Monitoring Results (2006).*

Borehole Ref	Boron µg/l	Barium µg/l	Cadmium µg/l	Calcium µg/l	Chloride mg/l	Copper µg/l	Iron µg/l	Lead µg/l	Magnesium µg/l	Manganese µg/l	Mercury µg/l	Nickel µg/l
BH 1	114	64	<1	48000	32	2	<2	3	11470	3938	<0.05	4
Dunlea Well	101	102	<1	86610	40	4	2	<1	16900	1848	<0.05	10
BH 3	11	53	<1	13390	18	3	<2	4	3232	215	<0.05	2
Coughlan Well	82	11	<1	8754	11	12	<2	<1	1945	51	<0.05	3
O'Leary Well	7	11	<1	5443	12	42	<2	<1	3052	13	<0.05	2
Reardon Well	Well unable to be sampled											

*Table 2. Annual Groundwater Monitoring Results (2006) continued.....*

Borehole Ref	Sodium mg/l	Potassium mg/l	Sulphate mg/l	TOC mg/l	TON mg/l	TPH µg/l	Phosphorous mg/l	Zinc µg/l	Faecal Coliforms cfu/100ml	Total Coliforms cfu/100ml	BTEX µg/l
BH 1	26	22	140	9	6.7	<10	0.26	3	<1	5	<10
Dunlea Well	40	9.4	217	7	4.5	<10	0.10	21	<1	28	<10
BH 3	12	1.8	15	4	7.5	<10	0.11	5	<1	9	<10
Coughlan Well	11.5	170	16	6	3.2	<10	0.06	38	<1	2	<10
O'Leary Well	0.9	0.8	6	4	4.4	<10	<0.05	33	<1	1	<10
Reardon Well	Well unable to be sampled										

2.2 *Quarterly Groundwater Results.*

2.2.1 Schedule D5 requires quarterly monitoring of groundwater quality at boreholes and private wells. WEML took field readings of pH, temperature and conductivity using a Dr Lange portable water meter. Other analysis was carried out by a third party laboratory. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 3. *Quarterly Groundwater Monitoring Results (Q1 2005).*

Borehole Ref	Level (m)	Temp (°C)	pH	Cond (µs/cm)	DO (mg/l)	Amm Nitrogen (mg/l)
BH 1	5.20	10.7	5.43	510	6.4	0.2
Rear BH	5.50	Analysis not required.				
BH 3	7.14	11.0	4.80	178	6.6	<0.2
Dunlea Well	6.39	11.0	5.80	710	5.6	<0.2
Coughlan Well	3.49	9.84	7.75	640	6.5	<0.2
Reardon Well	4.25	Well unable to be sampled				
O'Leary Well	3.50	10.0	5.58	105	6.4	<0.2

2.2.2 The next quarterly groundwater sampling is scheduled for April 2006.

2.3 *Quarterly Percolation Area Groundwater Results.*

2.3.1 Schedule D4 requires quarterly monitoring of groundwater quality at the percolation area for BOD, suspended solids and mineral oils. Analysis was carried out by a third party laboratory. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 4 *Quarterly Percolation Area Groundwater Monitoring Results (Q1 2006).*

Borehole Ref	No. Samples	BOD	SS	Mineral Oils
P1	1	<2 mg/l	<10 mg/l	<10 µg/l
<i>Licence Limits</i>		<i>25 mg/l</i>	<i>35 mg/l</i>	<i>5 mg/l</i>

2.3.2 The above results show compliance with the licence conditions.

2.3.3 The next quarterly percolation area groundwater quality sampling is scheduled for April 2006.

2.4 *Quarterly Foul Water Results.*

2.4.1 Schedule D6 requires quarterly monitoring of foul water emissions for pH, temperature, BOD, COD, suspended solids, detergents, fats/oils/grease and ammoniacal nitrogen. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 5. Quarterly Foul Water Monitoring Results (Q1 2006).

Sampling Ref	Temp (°C)	pH	BOD (mg/l)	Sus Solids (mg/l)	Fats, Oils, Grease (mg/l)	Amm Nitrogen (mg/l)
FW 1	6.41	7.57	42	61	<1	15.6
<i>Grab Sample Licence Limits</i>	<i>42 °C</i>	<i>6-10</i>	<i>3,000</i>	<i>2,000</i>	<i>100</i>	<i>100</i>

2.4.2 The above results show compliance with the licence conditions.

2.4.3 The next quarterly foul water quality sampling is scheduled for April 2006.

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# APPENDIX 1

## Laboratory Certificates

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## ALcontrol Laboratories Ireland

### Table Of Results

**Ref Number: 06-B00233/01**

**Sample Type: WATER**

Client: WEML (Dublin)

Location:

Date of Receipt: 12/01/2006  
(of first sample)

Client Contact: Andy Wood

Client Ref: Water Samples 12/01/06

ALcontrol Reference	Sample Identity	Other ID	Detection Method	5 DAY ATU	CV AA	Filtration	Filtration	FLAME PHOTO	FLAME PHOTO	GC	GC	GC	GC	GC	GC	GC	GC	
			Method Detection Limi	<2mg/l	<0.05ug/l	<1cfu/100ml	<1cfu/100ml	<0.2mg/l	<0.2mg/l	<10ug/l	<10ug/l	n/a	<10ug/l	<10ug/l	<10ug/l	<10ug/l	<10ug/l	<10ug/l
			UKAS Accredited	✓				✓	✓	✓	✓		✓	✓	✓	✓	✓	✓
			BOD	Dissolved Mercury Low Level	Faecal Coliforms*	Total Coliforms*	Potassium	Sodium	Diesel Range Organics	Mineral Oil by GC	DRO Interpretation	Petrol Range Organics C5-C9	Petrol Range Organics C10-12	Benzene	Toluene	Ethylbenzene	Total Xylene	
			mg/l	ug/l	cfu/100ml	cfu/100ml	mg/l	mg/l	ug/l	ug/l		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
06-B00233-S0021	WRS BH1	UNKNOWN	-	<0.05	<1	5	22.0	26.0	<10	<10	See attached	<10	<10	<10	<10	<10	<10	
06-B00233-S0022	WRS BH2	UNKNOWN	-	<0.05	>1	28	9.4	40.0	<10	<10	See attached	<10	<10	<10	<10	<10	<10	
06-B00233-S0023	WRS BH3	UNKNOWN	-	>0.05	>1	9	7.8	12.0	<10	<10	See attached	<10	<10	<10	<10	<10	<10	
06-B00233-S0024	WRS COUGHLAN	UNKNOWN	-	<0.05	>1	2	11.5	<10	<10	<10	See attached	<10	<10	<10	<10	<10	<10	
06-B00233-S0025	WRS O'LEARY	UNKNOWN	-	>0.05	>1	1	2.8	0.9	<10	<10	See attached	<10	<10	<10	<10	<10	<10	
06-B00233-S0026	WRS FOUL	UNKNOWN	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
06-B00233-S0027	WRS PERC	UNKNOWN	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

NDP = NO DETERMINATION POSSIBLE

THE DATA ON THIS PRELIMINARY REPORT IS NOT VALIDATED AND MAY BE SUBJECT TO CHANGE.

Checked By : Ann-Marie Rutledge

Interim  
 Validat

## ALcontrol Laboratories Ireland

### Table Of Results

**Ref Number: 06-B00233/01**

**Sample Type: WATER**

Client: WEML (Dublin)

Location:

Date of Receipt: 12/01/2006  
(of first sample)

Client Contact: Andy Wood

Client Ref: Water Samples 12/01/06

ALcontrol Reference	Sample Identity	Other ID	Detection Method	GC FID/CALC	GRAVIMETRIC	ICP IRIS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	
			Method Detection Lim	<10ug/l	<10mg/l	<0.05mg/l	<1ug/l	<3ug/l	<1ug/l	<120ug/l	<1ug/l	<1ug/l	<2ug/l	<1ug/l	<100ug/l	<1ug/l	<1ug/l
UKAS Accredited			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
			Mineral Oil by GC	Total Suspended Solids	Total Phosphorous	Dissolved Barium Low Level	Dissolved Boron Low Level	Dissolved Cadmium Low Level	Dissolved Calcium Low Level	Dissolved Chromium Low Level	Dissolved Copper Low Level	Dissolved Iron Low Level	Dissolved Lead Low Level	Dissolved Magnesium Low Level	Dissolved Manganese Low Level	Dissolved Nickel Low Level	Dissolved Zinc Low Level
			ug/l	mg/l	mg/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
06-B00233-S0021	WRS BH1	UNKNOWN	-	-	0.26	64	114	48000	3	2	<2	3	11470	3938	4	3	
06-B00233-S0022	WRS BH2	UNKNOWN	-	-	0.10	102	101	86610	5	4	2	<1	16900	1848	10	21	
06-B00233-S0023	WRS BH3	UNKNOWN	-	-	0.11	53	>1	13390	1	3	>2	4	3232	215	2	5	
06-B00233-S0024	WRS COUGHLAN	UNKNOWN	-	-	0.06	11	8	8754	4	12	>2	>1	1945	51	3	38	
06-B00233-S0025	WRS O'LEARY	UNKNOWN	-	-	>0.05	11	>1	5443	>1	42	>2	>1	3052	13	2	33	
06-B00233-S0026	WRS FOUL	UNKNOWN	-	61	-	-	-	-	-	-	-	-	-	-	-	-	
06-B00233-S0027	WRS PERC	UNKNOWN	<10	<10	-	-	-	-	-	-	-	-	-	-	-	-	

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

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Checked By : Ann-Marie Rutledge

Interim  
 Validat

## ALcontrol Laboratories Ireland

### Table Of Results

**Ref Number: 06-B00233/01**

**Sample Type: WATER**

Client: WEML (Dublin)

Location:

Date of Receipt: 12/01/2006  
(of first sample)

Client Contact: Andy Wood

Client Ref: Water Samples 12/01/06

			Detection Method	IR	IR	KONE	KONE	KONE	METER	METER	SPECTRO					
			Method Detection Lim	<1mg/l	<2mg/l	<1mg/l	<3mg/l	<0.3mg/l	<0.1mg/l	naph Units	<0.2mg/l					
			UKAS Accredited		✓	✓	✓	✓		✓	✓					
ALcontrol Reference	Sample Identity	Other ID	Oil, Fats & Greases (Dissolved)	Total Organic Carbon	Chloride	Sulphate	Total Oxidised Nitrogen as N	Dissolved Oxygen	pH	Ammoniacal Nitrogen as N						
			mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	pH Units	mg/l						
06-B00233-S0021	WRS BH1	UNKNOWN	-	9	32	140	6.7	6.4	-	0.2						
06-B00233-S0022	WRS BH2	UNKNOWN	-	7	40	217	4.5	5.6	-	<0.2						
06-B00233-S0023	WRS BH3	UNKNOWN	-	4	18	15	6.6	4.84	-	<0.2						
06-B00233-S0024	WRS COUGHLAN	UNKNOWN	-	6	11	16	6.6	6.5	-	<0.2						
06-B00233-S0025	WRS O'LEARY	UNKNOWN	-	4	12	6	6.4	-	-	<0.2						
06-B00233-S0026	WRS FOUL	UNKNOWN	>1	-	-	-	-	-	-	15.6						
06-B00233-S0027	WRS PERC	UNKNOWN	-	-	-	-	-	-	-	-						

**Notes :** METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

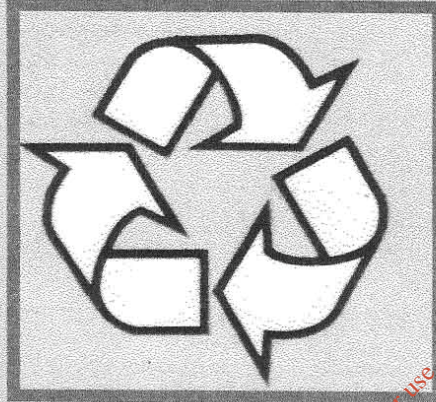
**NDP** = NO DETERMINATION POSSIBLE

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Checked By : Ann-Marie Rutledge



WASTE RECOVERY SERVICES  
(FERMOY) LTD



WASTE LICENCE REF: 107-1

SITE EMISSIONS REPORT  
2006 - Q4  
November 2006

Prepared by:

WOOD ENVIRONMENTAL MANAGEMENT LTD  
ENVIRONMENTAL MANAGEMENT CONSULTANTS

1 Castle Grove, Kilgobbin Wood, Sandyford, Dublin 18  
Tel: 087-2854171. Fax: 01-2945613  
E-mail: [a.wood@weml.ie](mailto:a.wood@weml.ie). Web Site: [www.weml.ie](http://www.weml.ie)



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### Appendices

Appendix 1	Laboratory Analytical Certificates
Appendix 2	Noise Monitoring Results

**1. Introduction.**

- 1.1 Waste Recovery Services (Fermoy) Ltd (WRS) commissioned WEML to carry out emissions monitoring at their EPA licensed facility at Cullenagh, Fermoy, Co Cork, as required under waste licence no: 107-1.
- 1.2 Schedule D of waste licence 107-1 requires WRS to carry out the following emissions monitoring.

*Table 1. Waste Licence Monitoring Requirements.*

Emission source & Ref	Frequency	Parameter
Groundwater	Monthly	Level
Groundwater	Quarterly	pH, temperature, conductivity, dissolved oxygen, ammoniacal nitrogen
Percolation Area	Quarterly	BOD, SS, mineral oils
Foul Water	Quarterly	Temperature, pH, BOD, COD, SS, detergents, fats/oil/grease, ammoniacal nitrogen
Dust	Three times a year	mg/m <sup>2</sup> /day
Noise	Annually	L(A) <sub>eq</sub> dBA
Groundwater	Annually	Heavy metals, List I/II organic substances, TOC, TSS, pH, total phosphorus, faecal coliforms, total coliforms

- 1.3 In addition to the above parameters, the EPA has requested that additional quarterly sampling and analysis is carried out for total coliforms and faecal coliforms.
- 1.4 WEML carried out emissions monitoring for the fourth 2006 quarterly sampling programme on 11<sup>th</sup> October 2006. The results including dust deposition and annual noise monitoring are presented in the following report.
- 1.5 The annual groundwater and first 2006 quarterly groundwater, foul water and percolation area sampling programme was carried out in January 2006. The second quarterly groundwater, foul water and percolation area sampling programme was carried out in March 2006. The third quarterly groundwater, foul water and percolation area sampling programme was carried out in July 2006. The results of the annual/Q1, Q2 and Q3 sampling programmes are presented in separate reports.

## 2. Results.

### 2.1 Quarterly Groundwater Results.

2.1.1 Schedule D5 requires quarterly monitoring of groundwater quality at boreholes and private wells. WEML took field readings of pH, temperature, and conductivity using a Dr Lange portable water meter. Other analysis was carried out by a third party laboratory. The results are tabulated below.

Table 2. Quarterly Groundwater Monitoring Results (Q4 2006).

Borehole Ref	Level (m)	Temp (°C)	pH	Cond (µs/cm)	DO (mg/l)	Amm Nitrogen (mg/l)
BH 1	3.97	11.9	5.95	354	7.2	<0.2
Rear BH	3.76	Measurements not required				
BH 3	5.35	12.60	5.49	374	6.3	<0.2
Dunlea Well	5.24	12.30	5.54	779	5.9	<0.2
Reardon Well	NR	14.40	5.59	151	8.5	<0.2
Coughlan Well	2.72	12.80	5.62	106	6.9	<0.2
O'Leary Well	1.82	11.90	5.97	113	7.7	<0.2

\*NR- No record. Well blocked.

2.1.2 The next quarterly groundwater sampling is scheduled for January 2007.

### 2.2 Groundwater Bacteriological Results.

2.2.1 In addition to the above chemical analysis, WRS requested WEML to commission bacteriological analysis of the groundwater samples. The results are tabulated below.

Table 3. Groundwater Bacteriological Results (Q4 2006).

Borehole Ref	Faecal Coliforms (cfu/100ml)	Total Coliforms (cfu/100ml)
BH 1	2	36
Rear BH	Sample not analysed	
BH 3	<1	2
Dunlea Well	1	46
Reardon Well	<1	66
Coughlan Well	1	24
O'Leary Well	<1	12

2.2.2 The above bacteriological results indicate that water from the wells should be boiled or disinfected if used for drinking water.

2.2.3 The presence of faecal coliforms in the samples from BH1 and Coughlan suggest that these water sources may be contaminated with human or animal faeces.



2.3 *Quarterly Percolation Area Groundwater Results.*

2.3.1 Schedule D4 requires quarterly monitoring of groundwater quality at the percolation area for BOD, suspended solids and mineral oils. Analysis was carried out by a third party laboratory. The results are tabulated below.

Table 4. *Quarterly Percolation Area Groundwater Monitoring Results (Q4 2006).*

Borehole Ref	No. Samples	BOD	SS	Mineral Oils
P1	1	<2 mg/l	<10 mg/l	<10 µg/l
<i>Licence Limits</i>		<i>25 mg/l</i>	<i>35 mg/l</i>	<i>5 mg/l</i>

2.3.2 The above results show compliance with the licence conditions.

2.3.3 The next quarterly percolation area groundwater quality sampling is scheduled for January 2007.

2.4 *Quarterly Foul Water Results.*

2.4.1 Schedule D6 requires quarterly monitoring of foul water emissions for pH, temperature, BOD, COD, suspended solids, detergents, fats/oils/grease and ammoniacal nitrogen. The results are tabulated below.

Table 5. *Quarterly Foul Water Monitoring Results (Q4 2006).*

Sampling Ref	Temp (°C)	pH	BOD (mg/l)	COD (mg/l)	Sus Solids (mg/l)	Detergents (mg/l)	Fats, Oils, Grease (mg/l)	Amm Nitrogen (mg/l)
FW 1	13.6	7.12	27	104	21	0.4	<1	1.2
<i>Grab Sample Licence Limits</i>	<i>42 °C</i>	<i>6-10</i>	<i>3,000</i>	<i>NL*</i>	<i>2,000</i>	<i>NL*</i>	<i>100</i>	<i>100</i>

\*NL - No licence limit set

2.4.2 The above results show compliance with the licence conditions.

2.4.3 The next quarterly foul water quality sampling is scheduled for January 2007.

2.5 *Dust Deposition Results.*

2.5.1 Schedule D2 requires dust deposition monitoring to be carried out three times a year, twice during the period May to September, and at least once during timber shredding operations.

2.5.2 WEML placed dust deposition monitors at the three agreed site locations between the following dates;

- July-August 2006
- August-September 2006
- September-October 2006

2.5.3 The dust monitoring results are presented below.

Table 6 *Dust Deposition Results (July-August 2006).*

Location	Solids (mg/l)	Total Volume (l)	Total Solids/sample (mg)	Dust Deposition (mg/m <sup>3</sup> /d)	Licence Limit(mg/m <sup>3</sup> /d)
D1	<10	3.5	<35	<22.32	350
D2	<10	1.5	<15	<9.56	350
D3	12	2.0	24	15.30	350

Table 7 *Dust Deposition Results (August-September 2006).*

Location	Solids (mg/l)	Total Volume (l)	Total Solids/sample (mg)	Dust Deposition (mg/m <sup>3</sup> /d)	Licence Limit(mg/m <sup>3</sup> /d)
D1	<10	5.0	<50	<28.34	350
D2	<10	5.0	<50	<28.34	350
D3	<10	5.0	<50	<28.34	350

Table 8 *Dust Deposition Results (September-October 2006).*

Location	Solids (mg/l)	Total Volume (l)	Total Solids/sample (mg)	Dust Deposition (mg/m <sup>3</sup> /d)	Licence Limit(mg/m <sup>3</sup> /d)
D1	<10	5.0	<50	<32.91	350
D2	<10	5.0	<50	<32.91	350
D3	<10	5.0	<50	<32.91	350

2.5.4 The above results show compliance with the licence conditions.

2.5.5 The next dust deposition sampling programme is scheduled for May 2007.

2.6 *Annual Noise Monitoring Results.*

2.6.1 Schedule D3 requires annual noise monitoring at 2 locations. A noise survey was carried out on 11<sup>th</sup> October 2006. The results are presented in Appendix 2.

# APPENDIX 1

## Laboratory Certificates

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- Interim
- Validated

# ALcontrol Laboratories Ireland

## Table Of Results

ms.nsl/6

**Ref Number: 06-B06447/01**

**Sample Type: WATER**

Client: WEML (Dublin)

Location:

Date of Receipt: 12/10/2006  
(of first sample)

Client Contact: Andy Wood

Client Ref: WRS

			Detection Method	5 DAY ATU	Calculation	Filtration	Filtration	GC FID/CALC	GRAVIMETRIC	IR	MBAS	METER	METER	METER	SPECTRO
			Method Detection Limit	<2mg/l	<0.2mg/l	<1cfu/100ml	<1cfu/100ml	<10ug/l	<10mg/l	<1mg/l	<0.2mg/l	<0.014mS/cm	<0.1mg/l	naph Units	<15mg/l
UKAS Accredited [Testing Laboratory] No. 1291			✓					✓	✓			✓		✓	✓
ALcontrol Reference	Sample Identity	Other ID	BOD Unfiltered	Total Ammonia as NH3	Faecal Coliforms*	Total Coliforms*	Mineral Oil by GC	Total Suspended Solids	Oils, Fats & Greases (Dissolved)	Surfactants	Conductivity (at 25 deg. C)	Dissolved Oxygen	pH	COD Unfiltered	
			mg/l	mg/l	cfu/100ml	cfu/100ml	ug/l	mg/l	mg/l	mg/l	mS/cm	mg/l	pH Units	mg/l	
06-B06447-S0001	WRS D1	UNKNOWN	-	-	-	-	-	<10	-	-	-	-	-	-	-
06-B06447-S0002	WRS D2	UNKNOWN	-	-	-	-	-	<10	-	-	-	-	-	-	-
06-B06447-S0003	WRS D3	UNKNOWN	-	-	-	-	-	<10	-	-	-	-	-	-	-
06-B06447-S0004	WRS BH1	UNKNOWN	-	<0.2	2	36	-	-	-	-	0.354	7.2	5.95	-	-
06-B06447-S0005	WRS BH3	UNKNOWN	-	<0.2	<1	2	-	-	-	-	0.374	6.3	5.49	-	-
06-B06447-S0006	WRS Dunlea	UNKNOWN	-	<0.2	1	46	-	-	-	-	0.779	5.9	5.54	-	-
06-B06447-S0007	WRS Coughlan	UNKNOWN	-	<0.2	1	24	-	-	-	-	0.106	6.9	5.62	-	-
06-B06447-S0008	WRS Reardon	UNKNOWN	-	<0.2	<1	86	-	-	-	-	0.151	8.5	5.59	-	-
06-B06447-S0009	WRS O'Leary	UNKNOWN	-	<0.2	<1	12	-	-	-	-	0.113	7.7	5.97	-	-
06-B06447-S0010	WRS Perc	UNKNOWN	<2	-	-	-	<10	<10	-	-	-	-	-	-	-
06-B06447-S0011	WRS Foul 1	UNKNOWN	316	22.2	-	-	-	38	<1	1.7	-	-	6.98	329	-
06-B06447-S0012	WRS Foul 2	UNKNOWN	26	5.2	-	-	-	11	<1	0.3	-	-	7.00	91	-
06-B06447-S0013	WRS Foul 3	UNKNOWN	27	1.2	-	-	-	21	<1	0.4	-	-	7.12	104	-

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

NDP = NO DETERMINATION POSSIBLE

Checked By : Ashling Mulcahy

## **APPENDIX 2**

### **Noise Monitoring Results**

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**ENVIRONMENTAL NOISE SURVEY**

**Site:** WRS Fermoy  
**Date:** 11<sup>h</sup> October 2006

Location	Description	Weather	Time Start	Duration	L1	L10	L50	L90	L99	LEQ	Comments
NP1	Site Entrance	Sunny, Dry	11:15	30 mins	72.9	57.0	40.3	32.9	31.2	60.2	Site operational. Noise from passing traffic.
NP 2	O'Reardon House	Sunny, Dry	13:40	30 mins	69.2	50.5	41.7	38.3	36.2	56.7	Site operational. Noise from passing traffic.

**Octave Analysis.**

Location	1Khz	2Khz	4Khz	8Khz	16Khz	31.5Khz	62.5Khz	125Khz	250Khz	500Khz
NP1	37.6	38.4	29.9	28.2	26.1	25.8	53.5	44.3	38.8	36.9
NP2	41.5	31.5	34.5	32.8	25.7	52.1	51.0	35.6	34.5	37.9

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**WEML**



# WOOD ENVIRONMENTAL MANAGEMENT LTD

Environmental Management & Ecological Consultants

Mr Adrian Dunlea  
Waste Recovery Services (Fermoy) Ltd  
Cullenagh  
Fermoy  
Co Cork

10<sup>th</sup> October 2007

Dear Adrian,

**RE: Site Monitoring Report.**

Please find enclosed the 2007 Q3 emissions monitoring report for your site. The report is unbound to facilitate you making copies for submission to the EPA.

This is the third quarterly monitoring report for 2007. The next sampling survey is scheduled for October 2007.

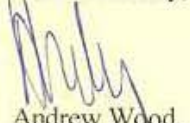
The points to note include;

- pH levels are low and below the drinking water standards, in all wells with the exception of the Reardon Well.
- High potassium levels are again recorded in Reardons Well ie. 180mg/l and BH1 21mg/l and 19 mg/l. The pH and potassium levels in Reardons well may indicate that the well is being treated with a potassium based alkaline chemical eg. potassium hydroxide.
- Total coliforms were recorded in BH1, Coughlan and O'Leary wells.
- High BOD was recorded in the foul water sample, above the licence limit ie. 3,486 mg/l compared to a licence limit of 3,000 mg/l.

I trust that the above report and above information are sufficient for your needs.

Please feel free to contact me on 087-2854171 if you wish to discuss further.

Yours sincerely,

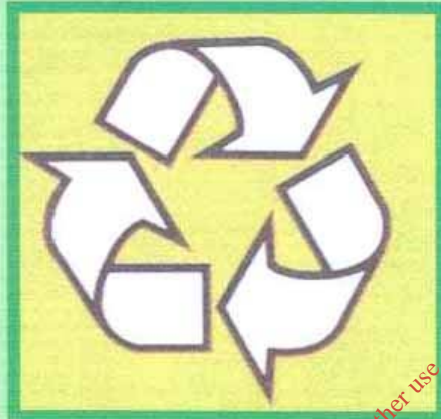


Andrew Wood.  
Managing Director.

Enc. Site Emissions Report Q3 October 2007.

1 Castle Grove, Kilgobbin Wood, Sandyford, Dublin 18, Ireland  
Tel/Fax: 01-4594430. Tel: 01-4594488/01-4594447. Mobile: 087-2854171.  
E-mail: [awood@weml.ie](mailto:awood@weml.ie) Web Site: [www.weml.ie](http://www.weml.ie)  
Registered in Ireland No. 315150

# WASTE RECOVERY SERVICES (FERMOY) LTD



WASTE LICENCE REF: 107-1

## SITE EMISSIONS REPORT 2007 Q3 October 2007

Prepared by:

**WOOD ENVIRONMENTAL MANAGEMENT LTD**  
ENVIRONMENTAL MANAGEMENT CONSULTANTS

1 Castle Grove, Kilgobbin Wood, Sandyford, Dublin 18  
Tel: 087-2854171. Fax: 01-2945613  
E-mail: [awood@weml.ie](mailto:awood@weml.ie) Web Site: [www.weml.ie](http://www.weml.ie)

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### Appendices

Appendix 1	Laboratory Analytical Certificates
Appendix 2	Noise Monitoring Results



**1. Introduction.**

- 1.1 Waste Recovery Services (Fermoy) Ltd (WRS) commissioned WEML to carry out emissions monitoring at their EPA licensed facility at Cullenagh, Fermoy, Co Cork, as required under waste licence no: 107-1.
- 1.2 Schedule D of waste licence 107-1 requires WRS to carry out the following emissions monitoring.

*Table 1. Waste Licence Monitoring Requirements.*

<b>Emission source &amp; Ref</b>	<b>Frequency</b>	<b>Parameter</b>
Groundwater	Monthly	Level
Groundwater	Quarterly	pH, temperature, conductivity, dissolved oxygen, ammoniacal nitrogen
Percolation Area	Quarterly	BOD, SS, mineral oils
Foul Water	Quarterly	Temperature, pH, BOD, COD, SS, detergents, fats/oil/grease, ammoniacal nitrogen
Dust	Three times a year	mg/m <sup>2</sup> /day
Noise	Annually	L(A) <sub>eq</sub> dBA
Groundwater	Annually	Heavy metals, TOC, TON, TPH, total phosphorus, faecal coliforms, total coliforms

- 1.3 WEML carried out emissions monitoring for the third 2007 quarterly groundwater, foul water and percolation area sampling programme on 28<sup>th</sup> July 2007. Additional sampling as part of the Q3 survey was carried out on 12<sup>th</sup> September 2007.
- 1.4 The results including dust deposition and annual noise monitoring are presented in the following report.



## 2. Results.

### 2.1 Quarterly Groundwater Results.

2.1.1 Schedule D5 requires quarterly monitoring of groundwater quality at boreholes and private wells. WEML took field readings of pH, temperature and conductivity using a Dr Lange portable water meter. Other analysis was carried out by a third party laboratory. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 2. Quarterly Groundwater Monitoring Results (Q3 2007).

Borehole Ref	Level (m)	Temp (°C)	pH	Cond (µs/cm)	DO (mg/l)	Amm Nitrogen (mg/l)
BH 1	5.25	12.3	5.53	480	5.0	0.2
Rear BH	5.22	Analysis not required.				
BH 3	7.22	11.8	5.34	300	6.6	<0.2
Dunlea Well	8.02	12.0	5.78	820	4.6	<0.2
Coughlan Well	3.69	12.3	5.46	121	5.7	<0.2
Reardon Well	Blocked	12.3	6.81	70	6.1	<0.2
O'Leary Well	3.15	12.6	6.5	113	6.8	<0.2
<b>Drinking Water Standards*</b>	<b>Not Applicable</b>	<b>25</b>	<b>6.5-9.5</b>	<b>2500</b>	<b>Not Applicable</b>	<b>0.3</b>

\* EU Quality of Drinking Water Intended for Human Consumption Regulations, 1988 SI No 81 of 1988 & EU Drinking Water Regulations SI No 439 of 2000.

2.1.2 The above results show that the groundwater quality does not comply with either the EU Quality of Drinking Water Intended for Human Consumption Regulations, 1988 SI No 81 of 1988 nor the EU Drinking Water Regulations SI No 439 of 2000 for the following parameters;

- pH in all wells with the exception of Reardon Well

2.1.3 In addition to the above analysis, as part of the quarterly sampling programme, the EPA has requested further groundwater analysis of the following parameters;

- Potassium
- Sodium
- Iron
- Zinc
- Copper
- Total coliforms
- Faecal coliforms

2.1.4 The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 3. Additional Quarterly Groundwater Monitoring Results (Q3 July 2007).

Borehole Ref	Potassium (mg/l)	Sodium (mg/l)	Iron (ug/l)	Zinc (ug/l)	Copper (ug/l)
BH 1	21.0	20.5	20	15	5
BH 3	3.1	14.5	17	15	2
Dunlea Well	11.1	38.5	16	19	5
Coughlan Well	0.8	8.0	14	20	13
Reardon Well	180.0	15.5	5	77	82
O'Leary Well	0.9	9.5	12	91	80
<b>Drinking Water Standards*</b>	<b>12</b>	<b>200</b>	<b>200</b>	<b>5000</b>	<b>200</b>

\* EU Quality of Drinking Water Intended for Human Consumption Regulations, 1988 SI No 81 of 1988 & EU Drinking Water Regulations SI No 439 of 2000.

Table 4. Additional Quarterly Groundwater Monitoring Results (Q3 Sept 2007).

Borehole Ref	Potassium (mg/l)	Total Coliforms (cfu/100ml)	Faecal Coliforms (cfu/100ml)
BH 1	19.0	<1	<1
BH 3	2.5	12	<1
Dunlea Well	8.7	<1	<1
Coughlan Well	0.7	6	<1
Reardon Well	Not Sampled		
O'Leary Well	0.9	1	<1
<b>Drinking Water Standards*</b>	<b>12</b>	<b>0</b>	<b>0</b>

\* EU Quality of Drinking Water Intended for Human Consumption Regulations, 1988 SI No 81 of 1988 & EU Drinking Water Regulations SI No 439 of 2000.

2.1.5 The above results show that the groundwater quality does not comply with either the EU Quality of Drinking Water Intended for Human Consumption Regulations, 1988 SI No 81 of 1988 nor the EU Drinking Water Regulations SI No 439 of 2000 for the following parameters;

- Total coliforms in BH3, Coughlan and O'Leary Well.
- Potassium in BH1 and Reardon Well.

2.1.6 The next quarterly groundwater sampling is scheduled for October 2007.

## 2.2 Quarterly Percolation Area Groundwater Results.

2.2.1 Schedule D4 requires quarterly monitoring of groundwater quality at the percolation area for BOD, suspended solids and mineral oils. Analysis was carried out by a third party laboratory. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 5. Quarterly Percolation Area Groundwater Monitoring Results (Q3 2007).

Borehole Ref	No. Samples	BOD	SS	Mineral Oils
P1	1	<2	<10	<10
<i>Licence Limits</i>		<i>25 mg/l</i>	<i>35 mg/l</i>	<i>5 mg/l</i>

2.2.2 The above results show compliance with the licence conditions.

2.2.3 The next quarterly percolation area groundwater quality sampling is scheduled for October 2007.

### 2.3 Quarterly Foul Water Results.

2.3.1 Schedule D6 requires quarterly monitoring of foul water emissions for pH, temperature, BOD, COD, suspended solids, detergents, fats/oils/grease and ammoniacal nitrogen. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 6. Quarterly Foul Water Monitoring Results (Q3 2007).

Sampling Ref	Temp (°C)	pH	BOD (mg/l)	Suspended Solids (mg/l)	Fats, Oils, Grease (mg/l)	Amm Nitrogen (mg/l)
FW 1	18.4	7.31	3.4	58	1	77.7
<i>Grab Sample</i>						
<i>Licence Limits</i>	<i>42 °C</i>	<i>6-10</i>	<i>3,000</i>	<i>2,000</i>	<i>100</i>	<i>100</i>

2.3.2 The above results show compliance with the licence conditions with the exception of BOD.

2.3.3 The next quarterly foul water quality sampling is scheduled for October 2007.

### 2.4 Dust Deposition Results.

2.4.1 Schedule D2 requires dust deposition monitoring to be carried out three times a year, twice during the period May to September, and at least once during timber shredding operations.

2.4.2 WEML placed dust deposition monitors at the three agreed site locations between the following dates;

- April-May 2007
- August-September 2007
- October-November 2007 (to be carried out)

2.4.3 The dust monitoring results are presented below.



Table 7. Dust Deposition Results (April-May 2007).

Location	Solids (mg/l)	Total Volume (l)	Total Solids/sample (mg)	Dust Deposition (mg/m <sup>3</sup> /d)	Licence Limit (mg/m <sup>3</sup> /d)
D1	<10	3.0	<30	<19.7	350
D2	12	3.0	36	23.69	350
D3	23	2.1	48.3	31.79	350

Table 8. Dust Deposition Results (August-September 2007).

Location	Solids (mg/l)	Total Volume (l)	Total Solids/sample (mg)	Dust Deposition (mg/m <sup>3</sup> /d)	Licence Limit (mg/m <sup>3</sup> /d)
D1	15	5.0	75	36.44	350
D2	<10	5.0	<50	24.29	350
D3	16	5.0	80	38.87	350

2.4.4 The above results show compliance with the licence conditions.

2.4.5 The next dust deposition sampling programme is scheduled for October-November 2007.

## 2.5 Annual Noise Monitoring Results

2.5.1 Schedule D3 requires annual noise monitoring at 2 locations. A noise survey was carried out on 28<sup>th</sup> July 2007. The results are presented in Appendix 2.



# APPENDIX 1

## Laboratory Certificates

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- Interim
- Validated

## ALcontrol Laboratories Ireland

### Table Of Results

**Ref Number: 07-B05181/01**

**Sample Type: WATER**

Client: WEML (Dublin) - Wood Environmental Management Ltd

Location:

Date of Receipt: 30/07/07  
(of first sample)

Client Contact: Andy Wood

Client Ref: WRS 26-07-07

UKAS Accredited [Testing Laboratory] No. 1291			Detection Method	5 DAY ATU	FLAME PHOTO	FLAME PHOTO	GC FID/CALC	GRAVIMETRIC	ICP MS	ICP MS	ICP MS	IR	METER	SPECTRO
			Method Detection Limit	<2mg/l	<0.2mg/l	<0.2mg/l	<10ug/l	<10mg/l	<1ug/l	<2ug/l	<1ug/l	<1mg/l	<0.1mg/l	<0.2mg/l
ALcontrol Reference	Sample Identity	Other ID	BOD Unfiltered	Sodium	Potassium	Mineral Oil by GC	Total Suspended Solids	Dissolved Copper Level	Dissolved Iron Low Level	Dissolved Zinc Low Level	Oils, Fats & Greases (Dissolved)	Dissolved Oxygen	Ammoniacal Nitrogen as N	
			mg/l	mg/l	mg/l	ug/l	mg/l	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l	
07-B05181-S0042	WRS BH1	UNKNOWN	-	20.5	21.0	-	-	5	20	15	-	5.0	0.2	
07-B05181-S0043	WRS BH3	UNKNOWN	-	14.5	3.1	-	-	2	17	15	-	6.6	<0.2	
07-B05181-S0044	WRS DUNLEA	UNKNOWN	-	38.5	11.1	-	-	5	16	19	-	4.6	<0.2	
07-B05181-S0045	WRS REARDON	UNKNOWN	-	15.5	180.0	-	-	82	5	77	-	6.1	<0.2	
07-B05181-S0046	WRS COUGHLAN	UNKNOWN	-	8.0	0.8	-	-	13	14	20	-	5.7	<0.2	
07-B05181-S0047	WRS O'LEARY	UNKNOWN	-	9.5	0.9	-	-	80	12	91	-	6.8	<0.2	
07-B05181-S0048	WRS FOUL	UNKNOWN	3486	-	-	-	58	-	-	-	1	-	77.7	
07-B05181-S0049	WR SURFACE	UNKNOWN	55	-	-	-	46	-	-	-	<1	-	20.1	
07-B05181-S0050	WRS PERC	UNKNOWN	<2	-	-	<10	<10	-	-	-	-	-	0.5	

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.  
THE DATA ON THIS PRELIMINARY REPORT IS NOT VALIDATED AND MAY BE SUBJECT TO CHANGE.

NDP = NO DETERMINATION POSSIBLE

Checked By : Cormac Lacey

- Interim
- Validated

## ALcontrol Laboratories Ireland

### Table Of Results

**Ref Number: 07-B06358/01**

**Sample Type: WATER**

Client: WEML (Dublin) - Wood Environmental Management Ltd

Location:

Date of Receipt: 12/09/07  
(of first sample)

Client Contact: Andy Wood

Client Ref: WRS

UKAS Accredited [Testing Laboratory] No. 1291			Filtration	Filtration	FLAME PHOTOD	GRAVIMETRIC													
Detection Method			<1cfu/100ml	<1cfu/100ml	<0.2mg/l	<10mg/l													
Method Detection Limit			<1cfu/100ml	<1cfu/100ml	<0.2mg/l	<10mg/l													
ALcontrol Reference	Sample Identity	Other ID	Faecal Coliforms*	Total Coliforms*	Potassium	Total Suspended Solids													
			cfu/100ml	cfu/100ml	mg/l	mg/l													
07-B06358-S0006	WRS BH1	12/09/07	<1	<1	19.0	-													
07-B06358-S0007	WRS BH3	12/09/07	<1	12	2.5	-													
07-B06358-S0008	WRS Dunlea	12/09/07	<1	<1	8.7	-													
07-B06358-S0009	WRS Coughlan	12/09/07	<1	6	0.7	-													
07-B06358-S0010	WRS O'Leary	12/09/07	<1	1	0.9	-													
07-B06358-S0011	WRS D1	12/09/07	-	-	-	NDP													
07-B06358-S0012	WRS D2	12/09/07	-	-	-	NDP													
07-B06358-S0013	WRS D3	12/09/07	-	-	-	NDP													

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**Notes :** METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL. **NDP = NO DETERMINATION POSSIBLE**  
THE DATA ON THIS PRELIMINARY REPORT IS NOT VALIDATED AND MAY BE SUBJECT TO CHANGE.

Checked By : Sharon Inglis



## APPENDIX 2

### Noise Monitoring Results

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ENVIRONMENTAL NOISE SURVEY

Site: WRS Fermoy  
 Date: 28<sup>th</sup> July 2007

Location	Description	Weather	Time Start	Duration	L1	L10	L50	L90	L99	LEQ	Comments
NP1	Site Entrance	Cloudy, dry, no wind	13:30	30 mins	67.9	58.6	52.0	43.3	38.8	57.2	Site operational. Noise from passing traffic.
NP 2	O'Reardon House	Rain, no wind	14:10	30 mins	71.8	49.5	43.3	40.5	39.2	59.6	Site operational. Noise from passing traffic.

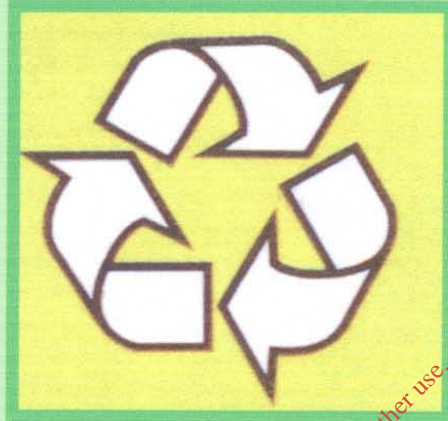
Octave Analysis.

Location	1Khz	2Khz	4Khz	8Khz	16Khz	31.5Khz	62.5Khz	125Khz	250Khz	500Khz
NP1	48.8	45.9	39.2	39.8	38.4	71.4	73.4	63.6	52.2	58.4
NP2	37.9	38.1	35.5	45.0	28.4	52.5	54.0	37.7	33.6	36.1

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WEML

# WASTE RECOVERY SERVICES (FERMOY) LTD



WASTE LICENCE REF: 107-1

## SITE EMISSIONS REPORT 2007 Q4 November 2007

Prepared by:

**WOOD ENVIRONMENTAL MANAGEMENT LTD**  
ENVIRONMENTAL MANAGEMENT CONSULTANTS

1 Castle Grove, Kilgobbin Wood, Sandyford, Dublin 18  
Tel: 087-2854171. Fax: 01-2945613  
E-mail: [awood@weml.ie](mailto:awood@weml.ie). Web Site: [www.weml.ie](http://www.weml.ie)

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### Appendices

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## 1. Introduction.

- 1.1 Waste Recovery Services (Fermoy) Ltd (WRS) commissioned WEML to carry out emissions monitoring at their EPA licensed facility at Cullenagh, Fermoy, Co Cork, as required under waste licence no: 107-1.
- 1.2 Schedule D of waste licence 107-1 requires WRS to carry out the following emissions monitoring.

Table 1. Waste Licence Monitoring Requirements.

Emission source & Ref	Frequency	Parameter
Groundwater	Monthly	Level
Groundwater	Quarterly	pH, temperature, conductivity, dissolved oxygen, ammoniacal nitrogen
Percolation Area	Quarterly	BOD, SS, mineral oils
Foul Water	Quarterly	Temperature, pH, BOD, COD, SS, detergents, fats/oil/grease, ammoniacal nitrogen
Dust	Three times a year	mg/m <sup>2</sup> /day
Noise	Annually	L(A) <sub>eq</sub> dBA
Groundwater	Annually	Heavy metals, TOC, TON, TPH, total phosphorus, faecal coliforms, total coliforms

- 1.3 WEML carried out emissions monitoring for the fourth and final 2007 quarterly groundwater, foul water and percolation area sampling programme on 17<sup>th</sup> October 2007.
- 1.4 The results including dust deposition are presented in the following report.

## 2. Results.

### 2.1 Quarterly Groundwater Results.

2.1.1 Schedule D5 requires quarterly monitoring of groundwater quality at boreholes and private wells. WEML took field readings of pH, temperature and conductivity using a Dr Lange portable water meter. Other analysis was carried out by a third party laboratory. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 2. Quarterly Groundwater Monitoring Results (Q4 October 2007).

Borehole Ref	Level (m)	Temp (°C)	pH	Cond (µs/cm)	DO (mg/l)	Amm Nitrogen (mg/l)
BH 1	8.86	11.9	6.20	450	4.5	7.2
Rear BH	9.63	Analysis not required.				
BH 3	11.30	11.6	6.12	300	5.2	<0.2
Dunlea Well	8.25	11.8	5.85	680	4.9	<0.2
Coughlan Well	6.25	11.8	5.50	134	6.0	<0.2
Reardon Well	Inside House	13.4	6.05	149	5.5	<0.2
Reardon Well	Outside Tap	13.2	7.85	770	4.9	<0.2
O'Leary Well	5.65	11.6	6.74	113	5.4	<0.2
<b>Drinking Water Standards*</b>	<b>Not Applicable</b>	<b>25</b>	<b>6.5-9.5</b>	<b>2500</b>	<b>Not Applicable</b>	<b>0.3</b>

\* EU Quality of Drinking Water Intended for Human Consumption Regulations, 1988 SI No 81 of 1988 & EU Drinking Water Regulations SI No 439 of 2000.

2.1.2 The above results show that the groundwater quality does not comply with either the EU Quality of Drinking Water Intended for Human Consumption Regulations, 1988 SI No 81 of 1988 nor the EU Drinking Water Regulations SI No 439 of 2000 for the following parameters;

- pH in all wells with the exception of Reardon Well (outside tap)
- ammoniacal nitrogen in BH1

2.1.3 In addition to the above analysis, as part of the quarterly sampling programme, the EPA has requested further groundwater analysis of the following parameters;

- Potassium
- Sodium
- Iron
- Zinc
- Copper
- Total coliforms
- Faecal coliforms

2.1.4 The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 3. Additional Quarterly Groundwater Monitoring Results (Q4 October 2007).

Borehole Ref	Potassium (mg/l)	Sodium (mg/l)	Iron (ug/l)	Zinc (ug/l)	Copper (ug/l)
BH 1	19.0	17.5	<2	5	3
BH 3	1.2	13.0	<2	4	2
Dunlea Well	7.1	32.0	<2	17	8
Coughlan Well	0.7	9.5	<2	22	12
Reardon Well (inside)	1.8	14.5	<2	46	45
Reardon Well (outside)	200	17.0	<2	61	126
O'Leary Well	0.9	9.0	<2	80	73
<b>Drinking Water Standards*</b>	<b>12</b>	<b>200</b>	<b>200</b>	<b>5000</b>	<b>200</b>

\* EU Quality of Drinking Water Intended for Human Consumption Regulations, 1988 SI No 81 of 1988 & EU Drinking Water Regulations SI No 439 of 2000.

Table 4. Additional Quarterly Groundwater Biological Monitoring Results (Q4 October 2007).

Borehole Ref	Total Coliforms (cfu/100ml)	Faecal Coliforms (cfu/100ml)
BH 1	160,000	<1
BH 3	500	1
Dunlea Well	17	2
Coughlan Well	700	<1
Reardon Well (inside)	10	1
Reardon Well (outside)	<1	<1
O'Leary Well	NR**	NR*
<b>Drinking Water Standards*</b>	<b>0</b>	<b>0</b>

\* EU Quality of Drinking Water Intended for Human Consumption Regulations, 1988 SI No 81 of 1988 & EU Drinking Water Regulations SI No 439 of 2000.

\*\* NR-No result.



2.1.5 The above results show that the groundwater quality does not comply with either the EU Quality of Drinking Water Intended for Human Consumption Regulations, 1988 SI No 81 of 1988 nor the EU Drinking Water Regulations SI No 439 of 2000 for the following parameters;

- Total coliforms in all tested wells with the exception of Reardon (outside tap).
- Faecal coliforms in BH1, Dunlea Well, and Reardon well (inside tap).
- Potassium in BH1 and Reardon Well (outside tap).

2.1.6 The next quarterly groundwater sampling is scheduled for January 2008.

2.2 *Quarterly Percolation Area Groundwater Results.*

2.2.1 Schedule D4 requires quarterly monitoring of groundwater quality at the percolation area for BOD, suspended solids and mineral oils. Analysis was carried out by a third party laboratory. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 5. *Quarterly Percolation Area Groundwater Monitoring Results (Q4 October 2007).*

Borehole Ref	No. Samples	BOD	SS	Mineral Oils
P1	1	<2	<10	<10
<i>Licence Limits</i>		<i>25 mg/l</i>	<i>35 mg/l</i>	<i>5 mg/l</i>

2.2.2 The above results show compliance with the licence conditions.

2.2.3 The next quarterly percolation area groundwater quality sampling is scheduled for January 2008.

2.3 *Quarterly Foul Water Results.*

2.3.1 Schedule D6 requires quarterly monitoring of foul water emissions for pH, temperature, BOD, COD, suspended solids, detergents, fats/oils/grease and ammoniacal nitrogen. The results are tabulated below. Laboratory certificates are presented in Appendix 1.

Table 6. *Quarterly Foul Water Monitoring Results (Q4 October 2007).*

Sampling Ref	Temp (°C)	pH	BOD (mg/l)	Sus Solids (mg/l)	Fats, Oils, Grease (mg/l)	Amm Nitrogen (mg/l)
FW 1	11.6	7.41	199	18	1	77.7
<i>Grab Sample Licence Limits</i>	<i>42 °C</i>	<i>6-10</i>	<i>3,000</i>	<i>2,000</i>	<i>100</i>	<i>100</i>

2.3.2 The above results show compliance with the licence conditions.



2.3.3 The next quarterly foul water quality sampling is scheduled for January 2008.

2.4 *Dust Deposition Results.*

2.4.1 Schedule D2 requires dust deposition monitoring to be carried out three times a year, twice during the period May to September, and at least once during timber shredding operations.

2.4.2 WEML placed dust deposition monitors at the three agreed site locations between the following dates;

- April-May 2007
- August-September 2007
- September–October 2007

2.4.3 The dust monitoring results are presented below.

Table 7. *Dust Deposition Results (April-May 2007).*

Location	Solids (mg/l)	Total Volume (l)	Total Solids/sample (mg)	Dust Deposition (mg/m <sup>3</sup> /d)	Licence Limit (mg/m <sup>3</sup> /d)
D1	<10	3.0	<30	<19.7	350
D2	12	3.0	36	23.69	350
D3	23	2.1	48	31.79	350

Table 8. *Dust Deposition Results (August-September 2007).*

Location	Solids (mg/l)	Total Volume (l)	Total Solids/sample (mg)	Dust Deposition (mg/m <sup>3</sup> /d)	Licence Limit (mg/m <sup>3</sup> /d)
D1	15	5.0	75	36.44	350
D2	<10	5.0	<50	24.29	350
D3	16	5.0	80	38.87	350

Table 9. *Dust Deposition Results (September-October 2007).*

Location	Solids (mg/l)	Total Volume (l)	Total Solids/sample (mg)	Dust Deposition (mg/m <sup>3</sup> /d)	Licence Limit (mg/m <sup>3</sup> /d)
D1	12	4.0	48	27.98	350
D2	19	4.0	76	44.31	350
D3	<10	4.0	<40	23.32	350

2.4.4 The above results show compliance with the licence conditions.

# APPENDIX 1

## Laboratory Certificates

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## ALcontrol Laboratories Ireland

### Table Of Results

07/000005

**Ref Number: 07-B07246/01**

**Sample Type: WATER**

Client: WEML (Dublin) - Wood Environmental Management Ltd

Location:

Date of Receipt: 19/10/2007

Client Contact: Andy Wood

(of first sample)

Client Ref: WRS

ALcontrol Reference	Sample Identity	Other ID	Detection Method														
			5 DAY ATU	Filtration	Filtration	FLAME PHOTO	FLAME PHOTO	GC	GC	GC	GRAVIMETRIC	ICP MS	ICP MS	ICP MS	IR	METER	SPECTRO
Method Detection Limit			< 2mg/l	< 1cfu/100ml	< 1cfu/100ml	< 0.2mg/l	< 0.2mg/l	< 10ug/l	< 10ug/l	n/a	< 10mg/l	< 1ug/l	< 2ug/l	< 1ug/l	< 1mg/l	< 0.1mg/l	< 0.2mg/l
UKAS Accredited [Testing Laboratory] No. 1291			✓			✓	✓	✓	✓		✓	✓	✓	✓			✓
			BOD Unfiltered	Faecal Coliforms*	Total Coliforms*	Sodium	Potassium	Diesel Range Organics	Mineral Oil by GC	DRB Interpretation	Total Suspended Solids	Dissolved Copper Low Level	Dissolved Iron Low Level	Dissolved Zinc Low Level	Oils, Fats & Greases (Dissolved)	Dissolved Oxygen	Ammoniacal Nitrogen as N
			mg/l	cfu/100ml	cfu/100ml	mg/l	mg/l	mg/l	ug/l		mg/l	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l
07-B07246-S0006	BH1	18/10/07	-	<1	160000	17.5	19.0	-	-	-	-	3	<2	5	-	4.5	7.2
07-B07246-S0007	BH3	18/10/07	-	1	500	13.0	-	-	-	-	-	2	<2	4	-	5.2	<0.2
07-B07246-S0008	Dunlea	18/10/07	-	2	17	32.0	-	-	-	-	-	8	<2	17	-	4.9	<0.2
07-B07246-S0009	Reardon Inside	18/10/07	-	1	10	14.5	-	-	-	-	-	45	<2	46	-	5.5	<0.2
07-B07246-S0010	Reardon Outside	18/10/07	-	<1	<1	17.5	200.0	-	-	-	-	126	<2	61	-	4.9	<0.2
07-B07246-S0011	Coughlan	18/10/07	-	<1	700	9.5	0.7	-	-	-	-	12	<2	22	-	6.0	<0.2
07-B07246-S0012	O'Leary	18/10/07	-	-	-	8.0	0.9	-	-	-	-	73	<2	80	-	5.4	<0.2
07-B07246-S0013	Foul	18/10/07	199	-	-	-	-	-	-	-	18	-	-	-	1	-	-
07-B07246-S0014	Perc	18/10/07	<2	-	-	-	-	<10	<10	See attached	<10	-	-	-	-	-	-
07-B07246-S0015	D1	18/10/07	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-
07-B07246-S0016	D2	18/10/07	-	-	-	-	-	-	-	-	19	-	-	-	-	-	-
07-B07246-S0017	D3	18/10/07	-	-	-	-	-	-	-	-	<10	-	-	-	-	-	-

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

NDP = NO DETERMINATION POSSIBLE

Checked By : Sharon Inglis

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\* SUBCONTRACTED TO OTHER LABORATORY / \*\* SAMPLES ANALYSED AT THE CHESTER LABORATORY