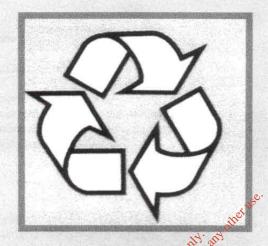
WASTE RECOVERY SERVICES (FERMOY) LTD



WASTE LICENCE REF: 107-1

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-mai:1:awood@wernl.ie. Web Site: www.weml.ie

Contents

			Page
1	Intro	duction	1
2	Resu	lts & Discussion	2
	2.1	Quarterly Groundwater	2 2 3 3
	2.2	Quarterly Percolation Area Groundwater	2
	2.3	Quarterly Foul Water	3
	2.4	Waste Licence Monitoring Requirements Quarterly Groundwater Results Quarterly Percolation Area Groundwater Results Quarterly Foul Water Results Dust Deposition Results (June-July 2005)	3
<u>Tab</u>	oles	ses of the tank	
Tab	le 1	Waste Licence Monitoring Requirements	
Tab	le 2	Quarterly Groundwater Results	
Tab	le 3	Quarterly Percolation Area Groundwater Results	
Tab	le 4	Quarterly Foul Water Results	
Tab	le 5	Dust Deposition Results (June-July 2005)	
Tab	le 6	Dust Deposition Results (July-September 2005)	
App	<u>vendices</u>	Cotreet	
Apr	endiv 1	Laboratory Certificates	

WEML

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	offict mg/m²/day
Noise	Annually	all all L(A) eq dBA
Groundwater	Annually	Heavy metals, List I/II organic substances, TOC, TON, PH, total phosphorus, faecal coliforms, total coliforms

1.3 WEML carried out emissions monitoring for the second 2005 quarterly sampling programme on 12th 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)	pН	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		Meas	urements r	ot require	ed
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	102 150	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
Licence	Limits	25 mg/l	35 mg/l	5 mg/l

- 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)	pН	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 license 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 9th June 2005. The monitors were collected on 8th 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/m³/d)	Licence Limit(mg/m³/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 8th July 2005. The monitors were collected on 12th 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/m³/d)	Licence Limit(mg/m³/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.

Consent of copyright owner required for any other use.

WEML

APPENDIX 1

Laboratory Certificates

Consent of copyright owner required for any other use.

ALcontrol Laboratories Ireland Interim ✓ Validated Table Of Results Ref Number: 05-B03571/01 Sample Type: WATER Client: WEML (Dublin) Location: Date of Receipt: 11/07/2005 Client Contact: Andy Wood (of first sample) Client Ref: WRS **Detection Method** GRAVIMETRIC <10mg/l Method Detection Limit **UKAS** Accredited UNKNOWN UNKNOWN <10 05-803571-50003 D1 D 2 05-803571-50004 <10 05-803571-80005 D3 UNKNOWN 15 Notes: METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL. NDP = NO DETERMINATION POSSIBLE Michael Corcoran Checked By:

Printed at 12:48 on 31/08/2005

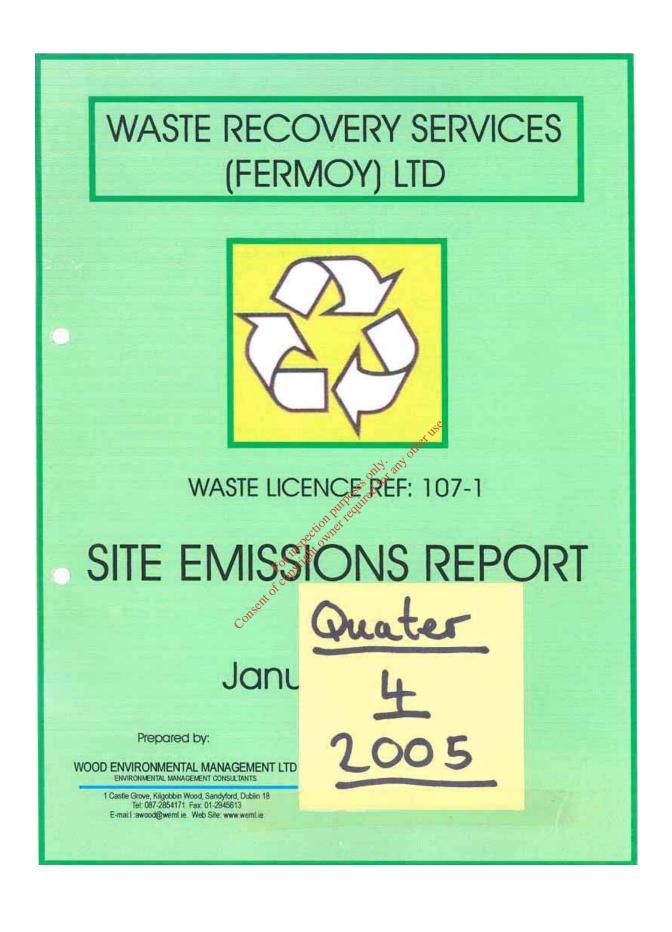
* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

5-B04835-S0004 WRS BH2 UNKNOWN	1,	Validated						Table	OfR	esults							
Date of Receipt: 13/09/05 Client Contact: Andy Wood (of first sample) Client Contact: Andy Wood (client Ref: WRS			Ref N	umber:	05-B0	4835/01					S	ample	Type:	WATE	R		
Date of Receipt: 13/09/05 Client Contact: Andy Wood Client Ref: WRS				Client	WEML	(Dublin)						(31)					
Client Ref: WRS Detection Method 5 DAY ATU GC FID/CALC GRAMMERISC IR MBAS METER SPECTRO SPECTRO Method Detection Limit 42mg/l 410mg/l 410mg/l 40.2mg/l 40.2mg/l 40.2mg/l 40.2mg/l 415mg/l			Data of I											Andul	Mood		
Detection Method S DAY ATU GC FID/CAL GRAVIMETRIC IR MBAS METER SPECTRO SPECTRO Method Detection Limit <2mg/l <10mg/l <10mg/l <0.2mg/l					13/09/0	13									vood		
Method Detection Limit UKAS Accredited V V V V V V V V V V			(OT TI	irst sample)								Clie	nt Ref:	WRS			
Name		Detection M	ethod	5 DAY ATU	GC FID/CALC	GRAVIMETRIC	IR	MBAS	METER	SPECTRO	SPECTRO						
ALCONTROL BO Other ID Winneral Other ID Winneral Other ID Winneral Other ID Other ID Winneral Other ID O		Method Detect	ion Limit	<2mg/l	<10ug/l	<10mg/l	<1mg/l	<0.2mg/l	<0.1mg/l	<0.2mg/l	<15mg/l						
mg/l ug/l mg/l		UKAS Accre	dited	1	1	V				1	1						
Mg/l	ALcontrol Reference	Sample identity	Other ID						Dissolved Oxygen	Ammoniacal Nitrogen as	cဗိစ္စ Settled						
5-B04835-S0007 WRS REARDON UNKNOWN	DOMBSE CA003	WDC BU1	LINIKOLONIKI	The second of the least of the	The same of the sa	A STATE OF THE PARTY OF THE PAR		mg/l	mail	mg/l	-						
5-B04835-S0007 WRS REARDON UNKNOWN			The second second second second second					.01	3 80			-					-
5-B04835-S0007 WRS REARDON UNKNOWN				-	-	_		ctions	8.9						-		
5-B04835-S0009 WRS PERC UNKNOWN 4 <10 <10	B04835-S0006				-	5.		30,00	9.1	100000000000000000000000000000000000000	-						
G-B04835-S0009 WRS PERC UNKNOWN 4 <10 <10	B04835-S0007	WRS REARDON	UNKNOWN	74	-	- 1	- ~	di	8.4	<0.2	-						
-B04835-S0010 WRS PERC UNKNOWN 4 <10 <10					(*)	*		Acres -	9.1	<0.2	+						
5-B04835-S0011 WRS D1 UNKNOWN 52 5-B04835-S0012 WRS D2 UNKNOWN <10 05							- 0										
5-D04635-S0012 WKS DZ UNKNOWN < 10 A						<10	₹ Ø¥										
					1000	52	ell.		-								_
	The second second			_		<10			_						-		 _
		1110 05	Oitilatottit														
			-												-	-	 _
			1												-		

Checked By: Lita Foley

Printed at 10:15 on 13/10/05

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



Contents

			Page
1	Introd	duction	1
2	Resul	ts & Discussion	2
	2,1	Quarterly Groundwater	2
	2.2	Quarterly Percolation Area Groundwater	2
	2.3		3
	2.4	Dust Deposition Results	2 2 3 3 3
	2.5	Noise Monitoring Results	3
Tab	oles	Quarterly Foul Water Dust Deposition Results Noise Monitoring Results Waste Licence Monitoring Requirements Quarterly Groundwater Results Quarterly Percotation Area Groundwater Results Quarterly Foul Water Results	
Tab	le 1	Waste Licence Monitoring Requirements	
Tab		Quarterly Groundwater Results	
Tab	le 3	Quarterly Percolation Area Groundwater Results	
Tab	le 4	Quarterly Foul Walter Results	
App	endices	Catiser	
App	endix 1	Laboratory Certificates	
App	endix 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	offer mg/m²/day
Noise	Annually	all all I(A) dBA
Groundwater	Annually	Heavy metals, List I/II organic substances, TOC, TO MTPH, total phosphorus, faecal coliforms, total coliforms

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

2. Results.

- 2.1 Quarterly Groundwater Results.
- Schedule D5 requires quarterly monitoring of groundwater quality at 2.1.1 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 (O3 2005).

Borehole Ref	Level (m)	Temp (°C)	pН	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		Meas	urements r	not require	ed
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	150e	4.8	< 0.2
Coughlan Well	3.10	10.7	5.23	150ge·	4.9	< 0.2
O'Leary Well	2.45	10.6	5.71.	A0104	5.9	< 0.2

*NR- No record. Well blocked.

- The next quarterly groundwater sampling is scheduled for March 2006.
- Quarterly Percolation Area Groundwater Results. 2.2
- 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
Licence	Limits	25 mg/l	35 mg/l	5 mg/l

- 2.2.2 The above results show compliance with the licence conditions.
- 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)	рН	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

Consent of copyright owner required for any other use.

✓ 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

	Detection M	tethod	5 DAY ATU	GC FID/CALC	GRAVIMETRIC	METER	SPECTRO							
-	Method Detect		<2mg/l	<10ug/l		<0.1mg/l	<0.2mg/l							
_	UKAS Accre	dited	V	1	1		/							-
	UKAS ACCIO	diceu	-				ъ			-				
ALcontrol Reference	Sample Identity	Other ID	вор	Mineral Oil by GC	Total Suspended Solids	Dissolved Oxygen	Ammoniacal Nitrogen as N	Sec. 4	id. and o	ther use.				
6			mg/l	ug/I	mg/l	mg/l	mg/l <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2 <0.2	upo ino						
5-B06768-S0011	BH1	UNKNOWN	-	-	-	4.9	<0.2	Lec's						
5-B06768-S0012	BH2	UNKNOWN				4.0	<002	5.						
5-B06768-S0012	BH3	UNKNOWN				5.6	60.21		_	-				
5-B06768-S0013	REARDON	UNKNOWN			Ŧ	4.8	SV <0.2							-
	COUGHLAN	UNKNOWN				4.9	. 0<0.2			-				
5-B06768-S0015	O'LEARY	UNKNOWN	-	-		69	<0.2							
5-B06768-S0016	PERC	UNKNOWN	5	<10	<10	-01	-							
5-B06768-S0017	PERC	DIVINOVIV	-			8								
						N					-			
					~	0								
		_			CO13									
			1											
											-			
			1											
		-	1											
	METHOD DETECTION												TON POSSIBLE	

Notes: METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUT

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

Checked By _____ Ann-Marie Ruttledge

Printed at 19:56 on 10/01/06

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

Page 1 of 1

✓ Interim

Validated

ALcontrol Laboratories Ireland

Table Of Results

Ref Number: 05-B06767/01

Client: WEML (Dublin)

Date of Receipt: 09/12/05

(of first sample)

Sample Type: WATER

Location:

Client Contact: Andy Wood

Client Ref: WRS

Г	Detection	Method	5 DAY ATU	GRAVIMETRIC	IR	MBAS		SPECTRO						
	Method Detec		<2mg/l	<10mg/l	<1mg/l	<0.2mg/l	<0.2mg/l	<15mg/l						
	UKAS Acci		1	/			V	/				 _		
ALcontrol Reference	Sample Identity	Other ID	вор	Total Suspended Solids	Oils, Fats & Greases (Dissolved)	Surfactants	Ammoniacal Nitrogen as N	COD Settled On The Control of the Co	y any of	ei ise.				
ĕ			mg/l	mg/l	mg/l	mg/l 0.4	mg/l	ALL MAN				_		
B06767-S0008	FOUL	UNKNOWN	9	17	<1	0.4	14.60	2 85						
							Decr MI							
						13	Shi							
						FOT	110							
				-		(0)								
						, or						-		
						en						1		
					COL	7		-	-					
			-	-										
		_	+ -											
												-		
												-		
			-											
			_	-									INATION POS	Const.

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

Ann-Marie Ruttledge Checked By

Printed at 20:09 on 10/01/06

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

Page 1 of 1

APPENDIX 2

Noise Monitoring Results

Consent of copyright owner required for any other use.

ENVIRONMENTAL NOISE SURVEY

Site: WRS Fermoy Date: 8th December 2005

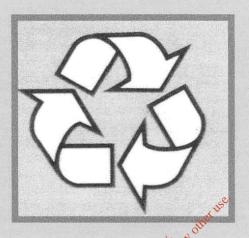
Location	Description	Weather	Time	Duration	L1	L10	L50	L90	L99	LEQ	Comments
			Start		CO 4	40.1	41.5	39.4	37.9	56.5	Site operational. Noise from
	O'Reardon	Dry,	11:00	30 mins	69.4	48.1	41.5	39.4	31.2		passing traffic.
NP 2	House	overcast	11:00	50 mins	(0.7	5/0	36.7	31.5	29.6	57.0	Site operational. Shredding
NP1	Site Entrance	Dry, overcast	11:45	30 mins	69.7	56.0	30.7	31.3	29.0		operations being carried out

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

dokaz 31.5Khz 62.5Khz 125Khz 500Khz 250Khz 8Khz 4Khz 1Khz 2Khz Location 39.1 44.1 38.4 46.5 025.4 49.2 24.9 20.9 31.7 60.4 NP2 30.7 35.8 42.5 36.5 Consent of 50.3 52.9 24.1 51.5 45.2 33.6 NP1

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-mai:l:awood@weml.ie. Web Site: www.weml.ie

Contents

			Page
1	Intro	duction	1
2	Resu	lts & Discussion	2
	2.1	Annual Groundwater	2
	2.2	Quarterly Groundwater	3
	2.3	Quarterly Percolation Area Groundwater	2 3 3 3
	2.4	Waste Licence Monitoring Requirements Annual Groundwater Results Quarterly Percolation Area Groundwater Results	3
<u>Tables</u>		ses ally any	
Table	1	Waste Licence Monitoring Requirements	
Table :	2	Annual Groundwater Results 10	
Table :	3	Quarterly Groundwater Results	
Table 4	4	Quarterly Percolation Area Groundwater Results	
Table	5	Quarterly Foul Water Results	

Appendices

Appendix 1 Laboratory Analytical Certificates

WEML

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	officer mg/m²/day						
Noise Annually		orly are L(A) eq dBA						
Groundwater Annually		Heavy metals, TOC, TON, TPH, total						

1.3 WEML carried out emissions monitoring for the annual groundwater and first 2006 quarterly groundwater. White water and percolation area sampling programme on 11th 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/1	Iron µg/I	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 .e.	1848	<0.05	10
BH 3	11	53	<1	13390	18	3	<2	45	3232	215	< 0.05	2
Coughlan Well	82	11	<1	8754	11	12	\\\ 2\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	N eff	1945	51	<0.05	3
O'Leary Well	7	11	<1	5443	12	42,00	e 2 2	<1 <1 esamp	3052	13	<0.05	2
Reardon Well					Well	anabl	e to be	samp	led			

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	ТРН µg/1	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					Wel	l unable	to be sam	pled			

- 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)	pН	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		An	alysis 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 sample	ed
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	
Licence	Limits	25 mg/l	35 mg/l	5 mg/l	

- 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)	pН	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
Grab Sample Licence Limits	42 °C	6-10	3,000	2,000	100	100

- 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.

Consent of copyright owner required for any other use.

APPENDIX 1

Laboratory Certificates

Consent of copyright owner required for any other use.

							Table	OI IC	Juits								
		Ref Nur	nber:	06-B0	0233/0	1					Sample	Type:	WATE	R			
			Client:	WEML	(Dublin)					Lo	cation:					
	D	ate of Re		12/01/2	2006						Client C	ontact:	Andy \	Nood			
		(of first	sample)								Clie	nt Ref:	Water	Sample	es 12/0	1/06	
	Detection I		5 DAY ATU	1,00,100,00,00	Filtration	Filtration	FLAME PHOTO	FLAME PHOTO	GC	GC	GC	GC	GC	GC	GC	GC	GC
	lethod Detec			<0.05ug/l	<1cfu/100ml	<1cfu/100ml	- 5,	The second second second		<10ug/l	n/a	<10ug/l			<10ug/l		<10ug/
	UKAS Acci	edited	✓				✓	✓	✓	✓			✓	✓	✓	√	✓
ALcontrol Reference	Sample Identity	Other ID	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	(Ing/I)	ug/l	ug/l		ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
06-B00233-S0021 06-B00233-S0022	WRS BH1 WRS BH2	UNKNOWN UNKNOWN	-	<0.05 <0.05	<1	5	22.0	26.0	<10	<10	See attached	<10	<10	<10	<10	<10	<10
06-B00233-S0022	WRS BH3	UNKNOWN	_	< 0.05	<1	9	4.8	12.0	<10 <10	<10 <10	See attached See attached	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10	<10 <10
06-B00233-S0024	WRS COUGHLAN	UNKNOWN		< 0.05	<1	2	170.0	11.5	<10	<10	See attached	<10	<10	<10	<10	<10	<10
06-B00233-S0025	WRS O'LEARY	UNKNOWN	-	< 0.05	<1	1 ,	0.8	0.9	<10	<10	See attached	<10	<10	<10	<10	<10	<10
06-B00233-S0026	WRS FOUL	UNKNOWN		+		- 10	07.	-	-	-	*	-	-	-	-	-	-
06-B00233-S0027	WRS PERC	UNKNOWN	<2		C ^c	nsent of a	mg/l 22.0 9.4 ch										(14)

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 Ruttledge

Printed at 09:16 on 03/10/2006

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

Page 1 of 3

✓ 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

	ICP MS ICP	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP MS	ICP IRIS	GRAVIMETRIC	GC FID/CALC	Method	Detection	
Dissolved Manganese Low Level Dissolved Manganese Low Level Dissolved Level Dissolved Copper Low Level Dissolved Calcium Level Dissolved Calcium Level Dissolved Barium Low Level Total Suspended Solids Sample Identity Alcontrol Reference	<1ug/l <1	<1uq/l	<100ug/l	<1ug/l	<2ug/l	<1ug/l	<1ug/l	<120ug/I	<1ug/l	<3ug/l	<1ug/l	<0.05mg/l	<10mg/l	<10ug/l	ction Limi	lethod Dete	1
ALCONITIOI Reference Mineral Oil by GC Dissolved Dissolved				the second secon	The second second	1	√	√	✓	✓	✓	✓	✓	✓	redited	UKAS Acc	
06-B00233-S0021 WRS BH1 WRS DETECTION OF B00233-S0022 WRS BH2 WRS COUGHLAN UNKNOWN 0.06 11 WRS O'CHEARY WRS FOUL WRS PERC WRS	Dissolved Nickel Low Level	Dissolved Manganese Low Level	Dissolved Magnesium Low Level	Dissolved Lead Low Level	Dissolved Iron Low Level	Dissolved Copper Low Level	Dissolved Chromium Low	Dissolved Calciumsow Level T. D	Dissolved Cadmium Low	Low	11000			Mineral Oil by GC	Other ID	Sample Identity	ALcontrol Reference
MRS BH1 UNKNOWN - - 0.26 64 114 114 114 114 115 114 115 114 115 114 115 115 114 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115 115	ug/l ug	-	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	199/11°	ug/l	ug/l	mg/l	mg/l				
06-B00233-S0022 WRS BH2 UNKNOWN 0.10 102 1010 1 1 1010 1 1 1010 1 1 1010 1 1 1 1010 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 :	3938	11470	3	<2		3	48000	5, 184	114	64	0.26	-		CAROLINA CONTRACTOR		
MRS DH3		1848	16900	<1	2		5	86610	es <1	1010	102	0.10	(*)		F32065812940000004		
06-B00233-S0024 WRS COUGHLAN UNKNOWN 0.06 11 1882 <1 8754 4 12 <2 <1 1945 51 3 106-B00233-S0025 WRS O'LEARY UNKNOWN <0.05 11 11 11 11 11 11 11 11 11 11 11 11 11	2 !	215	3232	4	<2	3		13390	<1	30, 71	53	0.11	-				
06-B00233-S0025 WRS O'LEARY UNKNOWN <0.05 11 - + + + + + + + + + + + + + + + + +	3 3	51	1945	<1	<2	12	4	8754	<1	S 82	11	0.06	s#4	-			
06-B00233-S0026 WRS FOUL UNKNOWN - 61	2 3	13	3052	<1	<2	42	<1	5443	<1	H. Ohr	11	< 0.05	-	-	UNKNOWN	WRS O'LEARY	
06-B00233-S0027 WRS PERC UNKNOWN <10 <10	-	-		-	-	-	-	-	(4)	Alle	- £0°	2	61	-	UNKNOWN	WRS FOUL	06-B00233-S0026
, and the second		-		7	ž.	9	-	-	250	N' =	cent of co	_	<10	<10	UNKNOWN	WRS PERC	/6-B00233-S0027
Coppe											112	උල්					

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 Ruttledge

Printed at 09:16 on 03/10/2006

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

Page 2 of 3

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

Client Contact: Andy Wood

(of first sample)

Client Ref: Water Samples 12/01/06

	Detection I	Method	IR	IR	KONE	KONE	KONE	METER	METER	SPECTRO			
	Method Detec			<2mg/l	<1mg/l	<3mg/l	<0.3mg/l	<0.1mg/l					
	UKAS Accr		11.119/1	√ ×	√ /	√ ×	√ .5/1/g/1		1	1			
ALcontrol Reference	Sample Identity	Other ID	Oils, Fats & Greases (Dissolved)	Total Organic Carbon	Chloride	Sulphate	Total Oxidised Nitrogen as N	Dissolved Oxygen	H Got and	Ammoniacar Nitrogen as N			
			mg/l	mg/l	mg/l	mg/l	mg/l	img/li	pH Units	mg/I			
6-B00233-S0021 6-B00233-S0022	WRS BH1 WRS BH2	UNKNOWN		9	32	140	6.7	Q, 18A	1975	0.2			
6-B00233-S0022	WRS BH3	UNKNOWN		4	10	15	4.5	5.6	4.84	<0.2 <0.2			
	WRS COUGHLAN			6	11	16	2000	6.6	4.84	<0.2			
6-B00233-S0024		UNKNOWN		4	11	10	IL SIL	0.5	-	<0.2			
6-B00233-S0025		UNKNOWN		71	12	000	11101	0.4	(m)				
6-B00233-S0020	WRS PERC	UNKNOWN	2.10.90.1			55 Y	6		-	15.6			
					උල්	nsent of c	mg/l 6.7 4.5.00 10.7 4.5.00 10.7 4.5.00						
			-										

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.

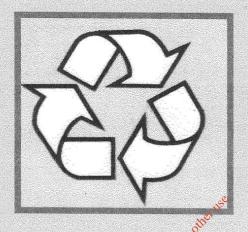
Checked By: Ann-Marie Ruttledge

Printed at 09:16 on 03/10/2006

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

Page 3 of 3

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-mai:I:awood@weml.ie. Web Site: www.weml.ie

Contents

		Page
1 Intro	oduction	1
2 Resu	ults & Discussion	2
2.1 2.2	Quarterly Groundwater Groundwater Bacteriological	2
2.3 2.4		2 2 3 3
2.5 2.6	Quarterly Percolation Area Groundwater Quarterly Foul Water Dust Deposition Results Annual Noise Monitoring Results Waste Licence Monitoring Requirements	4 4
<u>Tables</u>	nthe state of the	
Table 1	Waste Licence Monitoring Requirements	
Table 2	Quarterly Groundwater Results	
Table 3	Groundwater Bacteriological Results	
Table 4	Quarterly Percolation Area Groundwater Results	
Table 5	Quarterly Foul Water Results	
Table 6	Dust Deposition Results (July-August 2006)	
Table 7	Dust Deposition Results (August-September 2006)	
Table 8	Dust Deposition Results (September-October 2006)	
<u>Appendices</u>	Σ	
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	olites mg/m²/day
Noise	Annually	ald ald L(A) eq dBA
Groundwater	Annually	Heavy metals, List I/II organic substances, TOC, TON, TPH, 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 11th 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 Q3sampling programmes are presented in separate reports.

Results.

2.

- 2.1 Quarterly Groundwater Results.
- Schedule D5 requires quarterly monitoring of groundwater quality at 2.1.1 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.

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

Borehole Ref	Level (m)	Temp (°C)	pН	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		Meas	urements r	not require	ed
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, 15	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
- In addition to the above chemical analysis, WRS requested WEML to commission bacteriological analysis of the groundwater samples. The results are tabulated below.

Groundwater Bacteriological Results (Q4 2006). Table 3.

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

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

WEML

- 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
Licence	e Limits	25 mg/l	35 mg/l	5 mg/l

- 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)	рНС	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
Grab Sample Licence Limits	42 °C	6- 10	3,000	NL*	2,000	NL*	100	100

- *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/m³/d)	Licence Limit(mg/m³/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/m³/d)	Licence Limit(mg/m ³ /d)
D1	<10	5.0	<50	<28.34	350
D2	<10	5.0 sent	<50	<28.34	350
D3	<10	5.00	<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/m³/d)	Licence Limit(mg/m³/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 11th October 2006. The results are presented in Appendix 2.

APPENDIX 1

Laboratory Certificates

Consent of copyright owner required for any other use.

ALcontrol Laboratories Ireland ✓ Interim Table Of Results Validated

Ref Number: 06-B05697/01 Sample Type: WATER

Client: WEML (Dublin)

Date of Receipt: 13/09/06

(of first sample)

Location: WRS

Client Contact: Andy Wood

Client Ref: 11-09-06 WRS Samples D1-3

Г	Detection	Method	GRAVIMETRIC												
- 1	Method Dete		<10mg/l						_				-	_	
UKAS Accredite	d [Testing Labora		√ Iong/1		1					-					_
ALcontrol Reference	Sample Identity	Other ID	Total Suspended Solids				0	dy, any c	der dee.						
06-B05697-S0005	WRS D1	UNKNOWN	mg/l <10		çoi got ngent of cof	~	Jil dill			_	-		-		_
06-B05697-S0006	WRS D2	UNKNOWN	<10			dio	e e								
06-B05697-S0007	WRS D3	UNKNOWN	<10			Je Jah									
						03/11									
					405	100									
					70	3									
					- 0										
					10										
					ent										
					Up										
					7										
										 	1				
Natara I	METHOD DETECTION	L TATTE ARE NOT	ALMANC ACUITOU	DIE DUE TO	VADTOUG C	D 01 11 10 11 1						DETERMI			_

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 Ruttledge

Printed at 14:00 on 08/11/06

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

Page 1 of 1

ALcontrol Laboratories Ireland

✓ Interim Validated

Table Of Results

Ref Number: 06-B04930/01

Client: WEML (Dublin)

Date of Receipt: 08/08/06

(of first sample)

Sample Type: WATER

Location: WRS

Client Contact: Andy Wood

Client Ref: 05-08-06 WRS D1-3 Samples

	Detection I Method Detection UKAS Accr	tion Limit	GRAVIMETRIC <10mg/I ✓										
ALcontrol Reference	Sample Identity	Other ID	Total Suspended Solids		FOR INTEREST	os established	orany of	agi lise.					
6-B04930-S0001	WRS D1	UNKNOWN	mg/I <10			Mil all							
5-B04930-S0001	WRS D2	UNKNOWN	<10		The state of the s	- O	-		-	-	-	-	-
5-B04930-S0003	WRS D3	UNKNOWN	12		act a	40		-			_		-
5 50 1550 50005	WODS	OMIGIOWIY	12		1000			-			1		_
					COT 1780								
					100								
					, co								
					X O								
					EIII								
				200	,								

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

Checked By: Ann-Marie Ruttledge

Printed at 14:00 on 08/11/06

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

Page 1 of 1

ALcontrol Laboratories Ireland Interim √ Validated Table Of Results Sample Type: WATER Ref Number: 06-B06447/01 Client: WEML (Dublin) Location: Date of Receipt: 12/10/2006 Client Contact: Andy Wood (of first sample) Client Ref: WRS 5 DAY ATU Calculation Filtration | Filtration | GC FID/CALC GRAVIMETRIC IR MBAS METER METER METER SPECTRO **Detection Method Method Detection Limit** <1mg/l <0.2mg/l <0.014mS/cm <0.1mg/l napH Units <15mg/l <2mg/l <0.2mg/l <1cfu/100ml <1cfu/100ml <10ug/l <10mg/l UKAS Accredited [Testing Laboratory] No. 1291 Conductivity (at 25 C) ALcontrol Dissolved Oxygen Faecal Coliforms* Sample Identity s, Fats & Gre (Dissolved) Other ID Unfiltered PH Oil by Reference as GC cfu/100ml cfu/100ml mg/l ug/l mg/l mg/l mg/l mS/cm mg/l pH Units mg/l mg/l UNKNOWN 06-B06447-S0001 WRS D1 **C**10 UNKNOWN <10 06-B06447-S0002 WRS D2 UNKNOWN <10 06-B06447-S0003 WRS D3 06-B06447-S0004 WRS BH1 UNKNOWN <0.2 36 0.354 7.2 5.95 20 UNKNOWN 0.374 5.49 06-B06447-S0005 WRS BH3 < 0.2 <1 6.3 UNKNOWN < 0.2 0.779 5.9 5.54 06-B06447-S0006 WRS Dunlea 0.106 6.9 5.62 UNKNOWN < 0.2 06-B06447-S0007 WRS Coughlan 1 5.59 0.151 8.5 06-B06447-S0008 WRS Reardon UNKNOWN < 0.2 <1 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 UNKNOWN 316 22.2 38 <1 1.7 6.98 329 WRS Foul 1 7.00 91 UNKNOWN 26 5.2 11 <1 0.3 06-B06447-S0012 WRS Foul 2

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

1.2

UNKNOWN

WRS Foul 3

Printed at 10:20 on 31/10/2006

06-B06447-S0013

27

Checked By: Ashling Mulcahy

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

21

<1

0.4

7.12

104

NDP = NO DETERMINATION POSSIBLE

APPENDIX 2

Noise Monitoring Results

Consent of copyright owner required for any other use.

ENVIRONMENTAL NOISE SURVEY

Site:

Date:

WRS Fermoy 11^h October 2006

Location	Description	Weather	Time Start	Duration	L1	L10	L50	L90	L99	LEQ	Comments
	Site	Sunny,			72.9	57.0	40.3	32.9	31.2	60.2	Site operational. Noise from
NP1	Entrance	Dry	11:15	30 mins							passing traffic.
	O'Reardon	Sunny,			69.2	50.5	41.7	38.3	36.2	56.7	Site operational. Noise from
NP 2	House	Dry	13:40	30 mins				the			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	26.100	258.0	53.5	44.3	38.8	36.9
NP2	41.5	31.5	34.5	32.8	259	52.1	51.0	35.6	34.5	37.9

WEML

WOOD ENVIRONMENTAL MANAGEMENT LTD

Environmental Management & Ecological Consultants

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

10th 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 colifirms were recorded in MH3, Coughlan and O'Leary wells.
- High BOD was recorded in the food 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: awcod@weml.ie Web Site: www.weml.ie Registered in Ireland No. 315150





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 Tet: 087-2854171. Fax: 01-2945613 E-mail: awood@weml.ie. Web Site: www.weml.ie

Contents

			Page
1	Introd	luction	1
2	Resul	ts & Discussion	2
	2.1 2.2 2.3 2.4 2.5	Quarterly Groundwater Quarterly Percolation Area Groundwater Quarterly Foul Water Dust Deposition Results Annual Noise Monitoring Results	2 3 4 4 5
<i>Tab</i>	N 2	Dust Deposition Results Annual Noise Monitoring Results Waste Licence Monitoring Requirements Quarterly Groundwater Results Additional Quarterly Groundwater Results Groundwater Bacteriological Results	
Tab		Ouarterly Groundwater Results	
Tab	le 3	Additional Quarterly Cooundwater Results	
Tab	le 4	Groundwater Bacteriological Results	
Tab	le 5	Quarterly Pergolation Area Groundwater Results	
Tab	le 6	Quarterly Foul Water Results	
Tab	le 7	Dust Deposition Results (April-May 2007)	
Tab	le 8	Dust Deposition Results (August-September 2007)	
App	oendices		
App	endix I	Laboratory Analytical Certificates	
App	endix 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	Mcmg/m²/day
Noise	Annually	March L(A) eq 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 28th July 2007. Additional sampling as part of the Q3 survey was carried out on 12th September 2007.
- 1.4 The results including dust deposition and annual noise monitoring are presented in the following report.

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)	рН	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	ex 115e. 4.6	< 0.2
Coughlan Well	3.69	12.3	5.46	121 of	5.7	<0.2
Reardon Well	Blocked	12.3	6.81	Poses 470	6.1	< 0.2
O'Leary Well	3.15	12.6	oecion p	113	6.8	<0.2
Drinking Water Standards*	Not Applicable	250Tin	6.5- 9.5	300 820 121 300 121 300 121 121 300 121 130 113	Not Applicable	0.3

- EU Quality of Drinking Water Incended 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

WEML

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
Drinking Water Standards*	12	200	200	5000	200

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 Celiforms (Plus 100ml)	Faecal Coliforms (cfu/100ml)
BH 1	19.0	posited <1	<1
BH 3	2.5	Pilcoult 12	<1
Dunlea Well	8.7 ection	net <1	<1
Coughlan Well	0.7.20.0	6	<1
Reardon Well	For Wilde	Not Sampled	1000
O'Leary Well	0.00		<1
Drinking Water Standards*	onsert of 12	0	0

^{*} 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
Licence	2 Limits	25 mg/l	35 mg/l	5 mg/l

- 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)	pН	BOD (mg/l)	Sus Political Solids (mg/l)	Fats, Oils, Grease (mg/l)	Amm Nitrogen (mg/l)
FW 1	18.4	7.31	3 4 10 0	58	Ī	77.7
Grab Sample Licence Limits	42 °C	6-10 Cons	1000 kg 1,000	2,000	100	100

- 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/m³/d)	Licence Limit (mg/m³/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 (I)	Total Solids/ sample (mg)	Dust Deposition (mg/m³/d)	Licence Limit (mg/m³/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

- The above results show compliance with the license conditions.
- The next dust deposition sampling programme is scheduled for October-2.4.5
- 2.5
- November 2007.

 Annual Noise Monitoring Results and the second of the se 2.5.1 was carried out on 28th 12007. The results are presented in Appendix 2.

WEML

APPENDIX 1

Laboratory Certificates

Consent of copyright owner required for any other use.

✓ Interim Validated

ALcontrol Laboratories Ireland

Table Of Results

Ref Number: 07-B03616/01

Client: WEML (Dublin) - Wood Environmental Management Ltd

Date of Receipt: 29/05/07

(of first sample)

Sample Type: WATER

Location:

Client Contact: Andy Wood

Client Ref: WRS

		1850.0	Secretary Control							Cileni	Kel. WIN	G			
Г	Detection	Method	GRAVIMETRIC												
	Method Dete	ection Limit	<10mg/l												
UKAS Accredited			1	17-											
ALcontrol Reference	Sample Identity	Other ID	Total Suspended Solids	Çof			noses only	i any othe	Kitze.						
			mg/l			qi	it dit								
07-B03616-S0017	WRS D1	UNKNOWN	<10 12			HOTTLE	1								
07-B03616-S0018 07-B03616-S0019	WRS D2 WRS D3	UNKNOWN	23	_		OCC MIL									
07-803010-50019	WKS DS	OINNAONNA	2.3			15/11 C							_		
					COL	100									
					1,0	1									
					ξ ω,										
					X O										
					en										
				~ O	S.C.										-
		1 1													
			Aconomic day to a		C 200000 (1989)			and the same of th				222 000000			
Notes · M	ETHOD DETECTION	NUMBER ARE NOT	LALWAYS ACHIEV	ARI E DUE TO	VARIOUS C	TRO IMSTAN	CES BEYON	O CUR CO	VTROL		NDP	= NO DETER	VINATION PC	SSIBLE	

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: Norah O'Connor

Printed at 17:58 on 10/10/07

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

Page 1 of 1

ALcontrol Laboratories Ireland

Interim

Validated

Table Of Results

Ref Number: 07-B05181/01

Client: WEML (Dublin) - Wood Environmental Management Ltd

Date of Receipt: 30/07/07

(of first sample)

Sample Type: WATER

Location:

Client Contact: Andy Wood

Client Ref: WRS 26-07-07

Γ	Detection M	lethod	5 DAY ATU	FLAME PHOTO	FLAME PHOTO	GC FID/CALC	GRAVIMETRIC	ICP MS	ICP MS	ICP MS	IR	METER	SPECTRO		
	Method Detect	ion Limit	<2mq/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		
JKAS Accredite	d [Testing Laborato	ry] No. 1291	1	V	1	✓	V	✓	/	✓			1		
ALcontrol Reference	Sample Identity	Other ID	BOD Unfiltered	Sodium	Potassium	Mineral Oil by GC	Total Suspended Solids	Dissolved Copper Lewel	Dissolved from tow Level	Dissolyed Zinc Low Level	Oils, Fats & Greases (Dissolved)	Dissolved Oxygen	Ammoniacal Nitrogen as N		
· œ			mg/l	mg/l	mg/l	ug/l	mo/I	000/1	ug/I	ug/l	mg/l	mg/l	mg/l		
07-B05181-S0042	WRS BH1	UNKNOWN	-	20.5	21.0	- in	Dection of the state of the sta	5	20	15		5.0	0.2		
07-805181-50043	WRS BH3	UNKNOWN	-	14.5	3.1	-	CONTRO	2	17	15	(*)	6.6	<0.2		
7-B05181-S0044	WRS DUNLEA	UNKNOWN	-	38.5	11.1	- 0	5,02	5	16	19	* 1	4.6	<0.2		
07-B05181-S0045	WRS REARDON	UNKNOWN		15.5	180.0	- 10	dil	82	5	77		6.1	<0.2		
7-B05181-S0046	WRS COUGHLAN	UNKNOWN	-	8.0	0.8	601	100	13	14	20	*	5.7	<0.2		
7-805181-50047	WRS O'LEARY	UNKNOWN		9.5	0.9	105	-	80	12	91		6.8	< 0.2		
07-B05181-S0048	WRS FOUL	UNKNOWN	3486	-		S.Co	58			-	1	*	77.7		
7-B05181-S0049	WR SURFACE	UNKNOWN	55	-		X	46	*	973	-	<1	-	20.1		
7-B05181-S0050	WRS PERC	UNKNOWN	<2	-		<10	<10		-	-	+	*	0.5		
					Cons										

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: Cormac Lacey

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

Page 1 of 1

✓ 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

Client Contact: Andy Wood

(of first sample)

Client Ref: WRS

7-806358-50008 W	Detection Median Detection Median Detection De	ion Limit	raecal Colliforms,	Filtration < tdu/100ml Total Coliforms* cfu/100ml <1 12	<0.2mg/l	<10mg/l Total Suspended Solids	ection with duried to get to mine to the country of	diany office	Auge.				
7-B06358-S0009 W 7-B06358-S00010 V 7-B06358-S0011 V 7-B06358-S0011	Sample Identity WRS BH1 WRS BH3	O D D D D D D D D D D D D D D D D D D D	Faecal Colliforms*	Total Coliforms*	Potassium	Total Suspended Solids	authores offi	or any other	Auge.				
7-806358-S0006 7-806358-S0007 7-806358-S0009 7-806358-S0010 V7-806358-S0011 7-806358-S0011	Sample Identity WRS BH3 WRS BH3	Other ID	Faecal Coliforms* cfu/100ml	Coliforms*	Potassium	Total Suspended Solids	authores only	or any other	A Ise.				
7-806358-S0006 7-806358-S0007 7-806358-S0008 V 7-806358-S0009 V 7-806358-S0010 7-806358-S0011 7-806358-S0012	WRS BH1 WRS BH3	12/09/07 12/09/07	aecal Coliforms* cfu/100ml	Coliforms*		2700	alfoses of the	or any other	Ause.				
77-B06358-S0006 77-B06358-S0007 77-B06358-S0008 77-B06358-S0009 77-B06358-S0010 77-B06358-S0011 77-B06358-S0012	WRS BH3	12/09/07	<1 <1	<1	mg/l 19.0	mg/l	a pirk qui.						
7-806358-S0007 7-806358-S0008 V 7-806358-S0009 W 7-806358-S0010 V 7-806358-S0011 7-806358-S0012	WRS BH3	12/09/07	<1		19.0								
7-806358-50008 V 7-806358-50009 W 7-806358-50010 V 7-806358-50011 7-806358-50012				12			1011				_	-	
7-B06358-S0009 W 7-B06358-S0010 V 7-B06358-S0011 7-B06358-S0012	WRS Dunlea	12/00/07			2.5		action no				_		
7-806358-S0010 V 7-806358-S0011 7-806358-S0012	THE SAME AND ADDRESS.		<1	<1	8.7		5,02				_	-	
7-B06358-S0010 V 7-B06358-S0011 7-B06358-S0012	WRS Coughlan	12/09/07	<1	6	0.7	- 12	ill					-	
7-806358-S0012	WRS O'Leary	12/09/07	<1	1	0.9	COL	36						
	WRS D1	12/09/07	12	-	-	1500							
	WRS D2	12/09/07	191	*		£10							
	WRS D3	12/09/07	35	-		016							
					2	सार							
					Cour								
					C -								
									71		NO DETERM		

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.

Checked By: Sharon Inglis

Printed at 17:24 on 10/10/07

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

APPENDIX 2

Noise Monitoring Results

Consent of copyright owner required for any other use.

ENVIRONMENTAL NOISE SURVEY

Site: WRS Fermoy Date: 28th 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	40gs	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	3864	71.4	73.4	63.6	52.2	58.4
NP2	37.9	38.1	35.5	45.0	28.0	52.5	54.0	37.7	33.6	36.1

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-mai:l:awood@weml.ie. Web Site: www.weml.ie

Contents

			Page
1	Intro	duction	1
2	Resu	lts & Discussion	2
<i>Table</i> Table		Quarterly Groundwater Quarterly Percolation Area Groundwater Quarterly Foul Water Dust Deposition Results Waste Licence Monitoring Requirements Quarterly Groundwater Results Additional Quarterly Groundwater Results	2 4 4 5
Table Table Table Table Table Table Table Table	3 4 5 6 7 8	Quarterly Groundwater Results Additional Quarterly Groundwater Results Groundwater Bacteriological Results Quarterly Perconation Area Groundwater Results Quarterly Foul Water Results Dust Deposition Results (April-May 2007) Dust Deposition Results (August-September 2007) Dust Deposition Results (September-October 2007)	
1 abie	9	Dust Deposition Results (September-October 2007)	

Appendices

Appendix 1 Laboratory Analytical Certificates

Page 1 of 5

1. Introduction.

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

Waste Licence Monitoring Requirements. Table 1.

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	offer ing/m²/day
Noise	Annually	only art L(A) eq dBA
Groundwater Annually		L(A) eq dBA Reavy 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 17th October 2007.
- The results including dust deposition are presented in the following report. 1.4

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)	рН	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 of	6.0	< 0.2
Reardon Well	Inside House	13.4	6.05	Post of 199	5.5	<0.2
Reardon Well	Outside Tap	13.2	7.85 p	²⁰⁰ 770	4.9	<0.2
O'Leary Well	5.65	11,6 in	198.74	113	5.4	<0.2
Drinking Water Standards*	Not Applicable	5115E125	6.5- 9.5	2500	4.9 6.0 5.5 4.9 5.4 Not Applicable	0.3

^{*} 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	d2	5	3
BH 3	1.2	13,00	an <2	4	2
Dunlea Well	7.1	32.00	<2	17	8
Coughlan Well	0.7	32.0°C	<2	22	12
Reardon Well (inside)	1.8 100	× 14.5	<2	46	45
Reardon Well (outside)	200ec at	17.0	<2	61	126
O'Leary Well	0.9ght	9.0	<2	80	73
Drinking Water Standards*	8012	200	200	5000	200

^{*} EU Quality of Drinking Water Incended 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*
Drinking Water Standards*	0	0

^{*} 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	ally ass	Mineral Oils
P1	1	<2 1170	es difor <10	<10
Licence	Limits	25 mg/l	35 mg/l	5 mg/l

- 2.2.2 The above results show compliance with the licence conditions.
- 2.2.3 The next quarterly persolation 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)	pН	BOD (mg/l)	Sus Solids (mg/l)	Fats, Oils, Grease (mg/l)	Amm Nitrogen (mg/l) 77.7		
FW 1	11.6	7.41	199	18	1			
Grab Sample Licence Limits	42 °C	6-10	3,000	2,000	100	100		

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/m³/d)	Licence Limit (mg/m³/d)		
D1	<10	3.0	<30	(19.7 ×19.7	350		
D2	12	3.0	36 000	23.69	350		
D3	23	2.1	48,310 quit	31.79	350		

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

Location	Solids (mg/l)	1077277777	Total Solids/ sample (mg)	Dust Deposition (mg/m³/d)	Licence Limit (mg/m³/d)			
D1	15	500	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/m³/d)	Licence Limit (mg/m³/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

Consent of copyright owner required for any other use.

✓ Interim

ALcontrol Laboratories Ireland

Table Of Results

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

	Detection Method		5 DAY ATU	Filtration	Filtration	FLAME PHOTO	FLAME PHOTO	GC	GC	GC	GRAVIMETRIC	ICP MS	ICP MS	ICP MS	IR	METER	SPECTR
	Method Detect	ion 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	The second secon
UKAS Accredited [Testing Laboratory] No. 1		ry] No. 1291		Per lever and rest of the lever and the leve		✓	✓	V	V		1	√	✓ ✓	✓	v arriggt	vo.rmg/r	√ V
ALcontrol Reference	Sample Identity	Other ID	BOD Unfiltered	Faecal Coliforms*	Total Coliforms*	Sodium	Potassium	Diesel Range Organica	Mineral Oil by GC	DRÓ 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	mg/l	mg/l	(Cural)	ug/l		mg/l	ug/l	ug/l	ug/l	mg/l	mg/l	mg/l
07-B07246-50006	BH1	18/10/07	-	<1	160000	17.5	19.0 P	, 100	-	1-	4	3	<2	5	*	4.5	7.2
07-B07246-S0007	BH3	18/10/07	-	1	500	13.0	12 0°		-	-		2	<2	4		5.2	< 0.2
07-807246-50008	Dunlea	18/10/07		2	17	32.0	007.64		-			8	<2	17	-	4.9	< 0.2
07-B07246-S0009	Reardon Inside	18/10/07	-	1	10	14.5	27/18	-	-		-	45	<2	46		5.5	<0.2
07-B07246-S0010	Reardon Outside	18/10/07		<1	<1	17.8	0.7 0.9		-			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	-			9.00	0.9			-		73	<2	80		5.4	< 0.2
07-B07246-S0013	Foul	18/10/07	199	12	2	X Ox			-	_	18				1	-	
07-B07246-S0014	Perc	18/10/07	<2	-	Cons	en -	-	<10	<10	See attached	<10		- 4	- 1	-	-	
07-B07246-S0015	D1	18/10/07	-	12	- 01	-		2		_	12	2	- 2			-	
07-B07246-S0016	D2	18/10/07	-	-	C	-			7	12	19	1	-		2	21	2
07-807246-50017	D3	18/10/07	-	19.	-	-			•	-	<10		2	2			

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

NDP = NO DETERMINATION POSSIBLE

Checked By: Sharon Inglis

Printed at 16:19 on 06/11/2007

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