ANNUAL ENVIRONMENTAL REPORT – 2009

MIDLANDS WASTE TRANSER STATION

NAVAN, COUNTY MEATH

WASTE LICENCE REG. NO. W0131-02

ORIGINAL

MARCH 2010

BORD NA MÓNA

AES

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Abstract: This report presents the Annual Environmental Report for Midlands Waste Transfer Station, Navan, Co. Meath to the Environmental Protection Agency. The report covers the annual reporting period of 2009.

TABLE OF CONTENTS

PAGE

APPENDICES

LIST OF TABLES

PAGE

LIST OF FIGURES

PAGE

1. INTRODUCTION

The Environmental Protection Agency (EPA) issued Advanced Environmental Solutions (Ireland) Ltd. with a waste licence for its Waste Transfer Station at Clonmagaddan, Proudstown, Navan, Co. Meath (E2868 N2689), on 3rd February 2006. The waste licence reference number is W0131-02.

The facility is currently licensed to accept a maximum of 95,000 tonnes of waste per annum (38,000 tonnes of Household waste, 33,250 tonnes of Commercial and Industrial waste and 23,750 tonnes of Construction and Demolition waste). The site is located in Proudstown, north of Navan town.

In May 2007, Bord na Móna PLC acquired Advanced Environmental Solution (AES) Ireland Ltd., one of Irelands leading waste management companies which services 5,000 commercial customers and 60,000 domestic customers. The acquisition was a key part of the Bord na Móna PLC's diversification strategy and one which tied in perfectly with the existing Bord na Móna PLC areas of operation.

AES Ireland Ltd. currently operates a network of recycling & transfer facilities throughout Leinster and further afield. These facilities are located in Navan, Co. Meath, Tullamore, Co. Offaly, Portlaoise, Co. Laois, Nenagh, Co. Tipperary and Rosslare, Co. Wexford.

Fehily Timoney & Company (FTC) was retained to prepare and submit the Annual Environmental Report (AER) for the facility in compliance with Condition 11.7 and Schedule E of the waste licence.

This report addresses Condition 11.8 of the waste licence for the facility.

Condition 11.8 states that:

The licensee shall submit to the Agency, by the 31st March of each year, an AER covering the previous calendar year. This report, which shall be to the satisfaction of the Agency, shall include as a minimum the information specified in Schedule E: Annual Environmental Report of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.

This report addresses the items listed in *Schedule E: Annual Environmental Report* of the waste licence for the facility. This AER covers the reporting period from 1st January 2009 up to 31st December 2009.

1.1. Site Description and Activities

As previously referred to, AES operates a waste licence (W0131-02) for its Waste Transfer Station at Clonmagaddan, Proudstown, Navan, Co. Meath. Operations at the facility included the receipt of domestic, commercial, industrial and construction & demolition waste, which is sorted and segregated for onwards recycling in accordance to recycling potential. Waste deemed unsuitable for recycling and recovery is segregated and compacted for final disposal off-site.

The site location map and monitoring location maps are included in Appendix I.

1.1.3 Waste handling procedures

Normal operations at the site are between the hours of 08.00 – 20.00 Monday to Saturday, with empty waste collection vehicles leaving the facility from 06.00 Monday – Saturday. All waste accepted at the facility for disposal is removed from the facility within 48 hours of its arrival on-site (during bank holidays/ weekends waste is removed within 72 hours).

Current waste acceptance procedures involve the use of a computer based program called Integrated Waste System (IWS). The software is linked to the on-site weighbridge and is used for the recording of waste quantities accepted on-site. The vehicles registration number, customer and product is imputed into the system and from this detail, the source of the waste can be obtained.

After weighing, each waste load is brought to the enclosed Recycling Plant Building where it is deposited on the floor for visual inspection to ensure that all wastes comply with the requirements of the Waste Licence, W0131-02. The Waste Segregation Manager is responsible for carrying out visual inspections and for maintaining a written record of all loads.

Written records of each inspection are recorded on the incoming waste inspection sheet at the end of each working day. Only after visual inspection can the waste be identified for disposal or recovery.

Within the Recycling Plant Building the waste is sorted according to its recycling potential and s either deemed suitable for further onwards recycling/ recovery or compacted within one of the compactors on site/ ejector trailers and transported off-site for final disposal (non-recoverable waste) to an authorised landfill. The categories of waste deemed suitable for segregations and recycling is dependent on available markets for such materials. Materials commonly accepted for recycling include;- steel & iron, cardboard & newsprint, timber, soil & stone (suitable for backfill material), green waste, plasterboard, plastics, glass and occasional empty gas cylinders and tyres. Household mixed recyclables are collected and accepted at the facility, where the waste is forwarded off-site for further recovery. All waste deemed unsuitable for recycling/ recovery is loaded into designated ejector trailers or is compacted within one of the two compactors on-site. All compacted waste is sealed within specialised containers and are subsequently transported for authorised disposal. All waste being transported from the facility is weighed and recorded at the weighbridge. An individual weigh docket is printed for each waste load

2. EMISSIONS FROM THE FACILITY

Foul water produced at the facility (leachate and wastewater) is directed into a storage tank. This tank is emptied and wastewater directed to Navan Wastewater Treatment Plant (WWTP). In accordance with the requirements of the Waste Licence, W0131-02, details of each consignment of foul water removed from the facility is maintained. The overall waste summary records for the reporting period are presented in Table 2.1.

Table 2.1: Quantities (m3) of foul water removed from site during the reporting period

Month	2003	2004	2005	2006	2007	2008	2009
January	104	76	120	88	352	216	208
February	72	62	120	128	312	120	232
March	48	38	128	232	176	128	112
April	38	40	80	144	64	80	136
May	72	22	112	232	88	72	168
June	64	48	56	120	208	152	104
July	80	32	80	36	304	272	232
August	34	168	40	80	168	196	304
September	26	40	120	200	88	160	184
October	32	120	176	232	80	240	232
November	40	72	192	192	120	192	1304
December	88	104	232	248	136	136	456
Total	**698**	**822**	**1456**	**2032**	**2096**	**2064**	**3672**

3. WASTE MANAGEMENT RECORD

The waste that arrives at the site may be characterised as follows:-

- Household waste
- Commercial waste
- Industrial non-hazardous waste
- Construction & demolition waste

These waste classification, subsequent to inspection, can be further categorised as being either suitable for recycling / recovery off-site or disposal off-site to authorised disposal facilities. Hazardous waste is not accepted at the site. Hazardous waste in the form of batteries and fluorescent tubing that are inadvertently accepts to the site are segregated into individual storage skips/areas within the plant and subsequently collected by authorised contractors for further treatment/ disposal. Any materials that are suspect in nature (i.e. hazardous are not accepted at the facility) are routed to the Waste Quarantine Area within the Recycling Plant for further examination and processing prior to removal off-site for appropriate treatment/ disposal by an appropriate hazardous waste contractor.

3.1. Waste Activities carried out at the Facility

Waste activities at the facility are restricted to those outlined in *Part 1 - Activities Licensed* of the Waste Licence.

Licensed waste disposal activities, in accordance with the Third Schedule of the Waste Management Acts 1996 to 2008

Class 11. Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.

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

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

Licensed waste recovery activities, in accordance with the Fourth Schedule of the Waste Management Acts 1996 to 2008

Class 2. Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological processes). (P)

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

Class 4. Recycling or reclamation of other inorganic materials:

Class 11 Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule

Class 12. Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.

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

3.2. Waste Quantities and Composition

In accordance with the requirements of the Waste Licence, W0131-012, details of all waste handled at the facility are recorded. The waste summary records for this reporting period are presented in the following tables.

The incoming and outgoing waste volumes to Midlands Waste Transfer Station are presented in Table 3.1 & 3.2.

Waste Recovery Reports

Table 3.2 presents the waste recovered/ disposed from the facility.

Table 3.1: Incoming Waste to Midlands Waste Transfer Station

EWC Code	Total
02 03 99 – Waste from food production	7.14
15 01 01 BC – Cardboard	2114.02
15 01 01 BP – Cardboard	62
15 01 01 C – Cardboard	2771.9
15 01 01 MX – Cardboard	45.76
15 01 02 BPL – Plastic	4.06
15 01 02 PL – Plastic	8.08
15 01 07 - Glass Packaging	244
16 06 01 – Batteries	0.04
17 01 01/02 – C&D	117.42
17 01 07 – C&D	315.96
17 02 03 – Plastic	10.24
17 04 11 – Cables	2.34
17 05 04 – Soil & Stones	1043.88
17 08 02 – C&D	33.26
17 09 04 – C&D	7648.32
18 01 04 – Healthcare waste	239.34
20 01 01 NP – Paper	81.52
20 01 08 – Biodegradable waste	659.69
20 01 35* - WEEE	38.6
20 01 38 – Wood	1626.06
20 01 39 – Plastic	409.99
20 01 40 – Metal	409.12
20 01 99 P – Household MSW	64.48
20 02 01 – Biodegradable waste	895.4
20 03 01 C – Municipal Waste	22064.12
20 03 01 D – Municipal Waste	16316.28
20 03 01 K – Municipal Waste	4598.72
20 03 03 – Municipal Waste	1390.84
Grand Total	**63222.58**

Table 3.2: Outgoing Waste from Midlands Waste Transfer Station.

EWC Code	Outgoing Waste *(tonne)*	Waste Recovery / Disposal Destination Name	Waste Recovery / Disposal Destination Address	Licence/ Permit No.
02 03 99 – Waste from food production	6.9	Bord na Mona, Kilberry	Athy, Co. Kildare	W0198-01
15 01 01 BC – Cardboard	1977.54	Failand Paper Services Ltd.,	11 Triangle South, Clifton, Bristol UK BS8 1EY	
15 01 01 BC – Cardboard	66.48	Irish Packaging Recycling,	Ballymount Road, Walkinstown, Dublin 12	WPR 021/02
15 01 01 BC – Cardboard	2140.84	(MLM) ACN Europe (UK),	Adamson House, Towers Business Park, Wilmslow Road, Didsbury, Manchester M20 2YY	
15 01 01 BP – Cardboard	24.7	Failand Paper Services Ltd.,	11 Triangle South, Clifton, Bristol UK BS8 1EY	
15 01 01 C – Cardboard	56.86	AES Tullamore	Cappincur Industrial Est. Daingean Rd, Tullamore Co. Offaly	W0104-02
15 01 01 C – Cardboard	179.7	Irish Packaging Recycling,	Ballymount Road, Walkinstown, Dublin 12	WPR 021/02
15 01 02 BPL – Plastic	111.9	AWS Eco PlasticsLtd.,	Unit 2 Britannia Business Park, Point Pleasant Industrial Estate, Wallsend, Tyne & Wear NE28 6HA, EA	WML/73274
15 01 02 BPL – Plastic	19.78	Failand Paper Services Ltd.,	11 Triangle South, Clifton, Bristol UK BS8 1EY	
15 01 02 BPL – Plastic	61.78	Greenway Ireland Ltd.,	11 Porthill Road, Mountmorris, BT60 2TY	WML 03/02
15 01 02 PL – Plastic	19.66	AES Tullamore	Cappincur Industrial Est. Daingean Rd, Tullamore Co. Offaly	W0104-02
15 01 07 - Glass Packaging	6.02	Glassco Recycling Ltd.	Site 4, Osberstown Business Park, Naas, Co. Kildare	WP160/2004
15 01 07 - Glass Packaging	164.56	Glassdon Ltd.,	52 Creagh Rd., Toomebridge, Co. Antrim	LN/08/103
16 01 03 – Tyres	16.86	Crumb Rubber Ireland Ltd.,	Mooretown, Drumskin, Dundalk, Co. Louth	WP2007/01
16 06 01 - Batteries	1.32	Wilton Waste Recycling	Kiffa, Ballyjamesduff, Co. Cavan	W06/03
17 01 01/02 – C&D	967.42	Drehid WMF	Killinagh Upper, Carbury, Co. Kildare	W0201-03
17 01 07 – C&D	180.12	Doherty Quarries & Waste Management Facility	Cruicetown, Slane, Co. Meath	WMP 2007/39
17 01 07 – C&D	2919.94	Drehid WMF	Killinagh Upper, Carbury, Co. Kildare	W0201-03
17 02 01 - Wood	912.22	Doherty Quarries & Waste Management Facility	Cruicetown, Slane, Co. Meath	WMP 2007/39
17 02 01 – Wood	76.84	Doherty Quarries & Waste Management Facility	Cruicetown, Slane, Co. Meath	WMP 2007/39
17 02 01 – Wood	2270.7	Wilton Waste Recycling	Kiffa, Ballyjamesduff, Co. Cavan	W06/03
17 04 11 - Cables	2.76	Clearway	41 Dobbin Road, Portadown Co. Armagh BT62 4EY	LN/09/29
17 04 11 – Cables	3.02	Wilton Waste Recycling	Kiffa, Ballyjamesduff, Co. Cavan	W06/03
17 05 04 – Soil & Stones	36.7	Drehid WMF	Killinagh Upper, Carbury, Co. Kildare	W0201-03
17 05 04 – Soil & Stones	102.64	Damian Fitzsimons Waste Management	Gordon Bennetts Facility, Kingstown & Carnuff Great, Naven Co. Meath	WMP205/48
17 08 02 – C&D	9.06	Gypsum Recycling Ireland Ltd.,	Rathcoffey, Donadea, Naas, Co. Kildare	238/2006
17 08 02 – C&D	41.66	Panda Waste Services,	Rathdrinagh, Beauparc, Navan, Co. Meath	W0140-03
19 12 09 – Soil & Stones	16063.92	Drehid WMF	Killinagh Upper, Carbury, Co. Kildare	W0201-03
19 12 09 – Soil & Stones	887.6	Knockharley Landfill	Knockharley, Kentstown, Co. Meath	W0146-1

EWC Code	Outgoing Waste (tonne)	Waste Recovery / Disposal Destination Name	Waste Recovery / Disposal Destination Address	Licence/ Permit No.
19 12 12 – Waste from the mechanical treatment of waste	6764.02	Drehid WMF	Killinagh Upper, Carbury, Co. Kildare	W0201-03
19 12 12 – Waste from the mechanical treatment of waste	21118.02	Knockharley Landfill	Knockharley, Kentstown, Co. Meath	W0146-1
20 01 01 NP – Paper	6.62	AES Tullamore	Cappincur Industrial Est. Daingean Rd, Tullamore Co. Offaly	W0104-02
20 01 35* - WEEE	13.76	KMK Metals Recycling Ltd.,	Cappincur Industrial Estate, Daingean Rd. Tullamore, Co. Offaly	W0113-03
20 01 40 – Metal	660	Clearway	41 Dobbin Road, Portadown Co. Armagh BT62 4EY	LN/09/29
20 01 40 – Metal	181.96	Clearway	41 Dobbin Road, Portadown Co. Armagh BT62 4EY	LN/09/29
20 01 40 – Metal	606.62	Wilton Waste Recycling	Kiffa, Ballyjamesduff, Co. Cavan	W06/03
20 02 01 – Biodegradable waste	168.54	Bord na Mona, Kilberry	Athy, Co. Kildare	W0198-01
20 03 01 C – Municipal Waste	1	AES Tullamore	Cappincur Industrial Est. Daingean Rd, Tullamore Co. Offaly	W0104-02
20 03 01 C – Municipal Waste	0.54	Drehid WMF	Killinagh Upper, Carbury, Co. Kildare	W0201-03
20 03 01 K – Municipal Waste	4505.92	AES Tullamore	Cappincur Industrial Est. Daingean Rd, Tullamore Co. Offaly	W0104-02
20 03 01 K – Municipal Waste	48.5	Thorntons Waste Disposal Ltd.,	Killeen Rd. Ballyfermot, Dublin 10	W0044-02
Grand Total	**63405**			

4. RESOURCE AND ENERGY CONSUMPTION

4.1. Resource Consumption Summary

Some resources consumed at the Midland Waste Transfer Station are recorded. During the reporting period water usage on-site is not metered and has not been recorded, therefore, calculation of water usage is not possible at present.

Road Diesel Consumption was 791,307.8 Litres and Green Diesel Consumption was 101,977.4 Litres. The Kerosene usage for the site during 2009 was 4,955 Litres, value €2,210.08.

The total electrical consumption at the site was 250,120 kWh during the reporting period. During the same period foul water produced at the facility (leachate and wastewater) is directed into a storage tank. This tanks is emptied and wastewater directed to Navan WWTP. A total of 3,672 m3 was directed to Navan WWTP.

5. ENVIRONMENTAL OBJECTIVES & TARGETS

5.1. Progress against Targets for 2009

Progress against Targets for 2009 is presented in Table 5.1.

Table 5.1: Progress against Targets for 2009

Ref No	Objective	Target	Status
1	To investigate the feasibility of decreasing diesel consumption	To complete a trial of the use of Dipetane, an additive for diesel, to investigate the feasibility of its use in decreasing diesel consumption.	Trial completed; Dipetane is now in full use in the AES Navan fleet and increases fuel efficiency by 3-5% depending on the vehicle
2	To increase the area of hardstanding	Increase the area of hardstanding in the yard to assist vehicular parking	Midland Waste were not in a position to increase the area of hardstanding during 2009 as a decision on site remediation work is pending from the Agency.
3	Installation of upgraded Dust Suppression System	Install upgraded Dust Suppression System within Waste Transfer Building	New Dust Curtains were installed. However, a Dust Suppression System could not be installed during 2009 as a decision on site remediation work is pending from the Agency.

5.2. Schedule of Objectives and Targets for 2010

The proposed schedule of Objectives and Targets for 2010 is presented in Table 5.2

Table 5.2: Proposed schedule of Objectives and Targets for 2010

Ref No	Objective	Target	Timescale	Response	Status
1	To increase the area of hardstanding	Increase the area of hardstanding in the yard to assist vehicular parking	Dec-10	FF	Ongoing
2	Diversion of biodegradable commercial waste from landfill	Increase awareness and encourage commercial customers to avail of the brown bin collection to increase diversion of biodegradable commercial waste from landfill	Dec-10	FF	Ongoing
3	Environmental Monitoring	As per Waste Licence: Should any limits be exceeded, corrective actions to be implemented.	Dec-10	FF/LC	Ongoing
4	Installation of up-graded Dust Suppression System	Install upgraded Dust Suppression System within Waste Transfer Building	Dec-10	FF	Ongoing
5	Upkeep of Environmental Management System	Accreditation of EMS to ISO 14001	Dec-10	FF/LC	Ongoing
6	Environmental Training & Awareness	Review all Environmental Training Requirements	Sep-10	FF/LC	Ongoing

6. SUMMARY OF ENVIRONMENTAL MONITORING

Environmental monitoring at the facility is carried out in accordance with Condition 6 and Schedule C of the waste licence for the facility. The following sections 6.1 to 6.3 present the results of monitoring for the year 2009.

The environmental media monitored and the frequencies of monitoring at the facility are as follows:

1.	Noise	Annually
2.	Dust Deposition	Three times per annum
3.	Storm Water Emissions	Weekly & Quarterly
4.	Emissions to Sewer	Quarterly
5.	Bioaerosol monitoring	Annually
6.	Groundwater	Biannually

Sections 6.7 present a summary of the Environmental Management Programme. These sections review the reports on the previous year (2009) and present proposals for the current year (2010).

6.1. Noise Monitoring Report Summary

In compliance with the requirements of the Waste License, W0131-02, AES Ltd., conducted annual noise monitoring at six locations at their site in Proudstown, Navan, Co. Meath. Noise monitoring was carried out on the 23 April 2009.

L_{Aeq}, L_{A10}, L_{A90} values and 1/3 Octave band analysis was monitored at six monitoring locations, four boundary locations and two noise sensitive location (NSL). The noise monitoring locations are presented in Table. 6.1.

Table 6.1: Noise monitoring Locations

Monitoring Location Reference	Location Type	Geographical location from the site
N1	Boundary	North Eastern corner
N2	Boundary	North Western corner
N3	Boundary	South Western corner
N4	Boundary	South Eastern site corner
N5	Noise Sensitive Location	North East of the site (GAA Ground)
N6	Noise Sensitive Location	South of the site (Housing Estate)

The daytime L_{Aeq} recorded at the four boundary locations ranged from 48 dB at N3 to 61 dB at N4. The daytime L_{Aeq} recorded at the noise sensitive location N5 was 51 dB and 50 dB at N6. Elevated noise levels were noted at two of the four boundary locations (N1 and N4) during monitoring. The summary results are presented in Table 6.2.

Table 6.2: Noise monitoring Results

Monitoring Location Reference	Measurement Period *(mins)*	Time	L_{Aeq} *(dB)*	L_{A10} *(dB)*	L_{A90} *(dB)*	L_{AfMAX} *(dB)*
N1	30	17:02	57	57	50	84
N2	30	14.23	55	57	50	79
N3	30	14.58	48	51	45	66
N4	30	15.33	61	64	55	80
N5	30	16.09	51	54	46	72
N6	30	14.14	50	53	41	73

The main source of noise recorded at boundary locations N1 and N2 were, for the most part, due to off-site activities and trucks on the main access road to the facility and Kilsaran. A greater part of the noise levels recorded at N3 and N4 are considered to be due to site activities. Tonal noise was not detected at any of the boundary locations.

The noise levels recorded at the two noise sensitive locations N5 (51 dB) and N6 (50 dB) were below the licence limit of 55 dB, as specified in Waste Licence, W0131-02. The dominant sources of noise at these locations originated from off-site sources such as passing traffic, barking dogs and general residential activities.

No audible noise was noted from the facility at N5. At the N6 noise sensitive location, intermittent beeping of reversing machinery was audible, however it was hard to distinguish as to weather its was from the AES or Kilsaran facility. Tonal noise was not detected at either of the noise sensitive locations.

The full noise report is included in Appendix II.

6.2. Ambient monitoring Summary

In compliance with the requirements of the waste licence, W0131-02, dust monitoring at the Midland Waste Transfer Station was undertaken. Monitoring was carried out on three times during the reporting period.

There are three dust monitoring locations on site, detailed in Table 6.3.

Table 6.3: Dust monitoring Locations

Monitoring Location	Grid Co-ordinates	Description
D1	286877E, 269773N	Back of site (Southeast)
D2	286777E, 269892N	Front of Site (Adjacent to road) (Northwest)
D3	286814E, 269889N	Front of Site (Adjacent to road) (North)
D4	286882E, 269871N	Located in Car Park (Northeast)

Four dust pots were installed for a 30 day period 14 January – 12 February2009, for a 28 day period from 30 April – 28 May and finally three dust pots were installed for 32 day period from the 23 July – 24 August. The results for monitoring are presented in Table 6.4.

Table 6.4: Dust monitoring Results

Monitoring Location	Dust Deposition Limit	Deposition Rate *(14 January – 12 February)*	Deposition Rate *(30 April – 28 May)*	Deposition Rate *(23 July – 24 August)*
	(mg.m^2/day)			
D1	350	90	90	Note 1
D2	350	129	78	1278
D3	350	140	782	1221
D4	350	45	72	137

Note 1 – Dust gauge was in repair for this monitoring period

As can be seen in Tables 6.4, the dust deposition level of 782 mg/m^2/day at the D3 dust during the second round and 1221 mg/m^2/day during the third round of monitoring is elevated above the licence limit of 350 mg/m^2/day as per Schedule B5 of Waste Licence, W0131-02. D3 is located at the entrance to the AES Site. Looking at the directional dust gauges, the majority of dust came from the east. To the east is the main access road to the AES and Kilsaran sites, therefore elevated dust the area would have resulted from traffic on the main access road to both Kilsaran and AES sites.

During the third round of monitoring dust levels were elevated above licence limits at D2 of 1278 mg/m^2/day. D2 is located on the northern boundary of the facility, adjacent to Kilsaran site entrance. Directions dust gauge monitoring show that the majority of dust originated from the south, and is contributed to from the Kilsarn facility.

The full dust monitoring reports are attached in Appendix II.

6.3. Storm Water Monitoring & Emissions to Sewer Monitoring Summary

In accordance with the requirements of the co Waste Licence, W0131- 02, the facility is required to conduct monitoring of Storm Water and Emissions to Sewer from the facility on a quarterly basis.

Emission limits for trade effluent and storm water are not specified in the Waste. It should also be noted that this effluent is sent by tanker to the local authority WWTP.

Table 6.5: Storm water & Emission to Sewer Monitoring Locations

Sample Point	Location
GWE-2 (Storm Water)	North West corner of site
GWE-3 (Storm Water)	East of the site
Emissions to Sewer	Trade Effluent Storage tank beside fuel tank

The results of monitoring emissions to sewer are presented in Table 6.6, while the results for storm water monitoring is presented in Table 6.7.

Table 6.6: Emission to Sewer Monitoring Results

Parameter	Sewer Sample Quarter 1	Sewer Sample Quarter 2	Sewer Sample Quarter 3	Sewer Sample Quarter 3
pH (pH units)	7.7	7.5	5.5	5.8
Total Organic Carbon (mg/l)	108	213	1251	401
BOD (mg/l)	178	475	2275	1113
COD (mg/l)	481	1020	3725	2078
Total Suspended Solids (mg/l)	131	210	638	531
Sulphate (mg/l)	44.8	6	425.64	483.54
** Copper (µg/l)	22	<2	35	54
** Zinc(µg/l)	223	567	674	500
Oils fats and greases (mg/l)	16	53	38	<1
** DRO (µg/l)	606	68900	41000	7530
** Mineral Oil (µg/l)	< 10	<10	39900	850
Detergents (MBAS) (mg/l)	0.58	2.60	0.34	0.46

Table 6.7: Storm water Monitoring Results

Parameter	Quarter 1		Quarter 2		Quarter 3		Quarter 4	
	GWE-2	GWE-3	GWE-2	GWE-3 NOTE 1	GWE-2 NOTE 2	GWE-3 NOTE 2	GWE-2 NOTE 2	GWE-3 NOTE 2
pH (pH units)	7.5	7.1	7.6	-	-	-	-	-
Conductivity (µS/cm)	14	26	161	-	-	-	-	-
BOD (mg/l)	<2	<2	18	-	-	-	-	-
COD (mg/l)	38	39	78	-	-	-	-	-
Total Suspended Solids (mg/l)	<5	<5	<5	-	-	-	-	-
Total Nitrogen (mg/l)	<1	<1	5	-	-	-	-	-
Ammonia (mg/l)	0.18	0.33	1.49	-	-	-	-	-

Note 1 – Results for GEW-3 Quarter 2 not available as no sample was collected due to minimal rain fall during monitoring
Note 2 – Results for GEW-2 and GEW-3 Quarter 3 & 4 are not available as no sample was collected due to minimal rain fall during monitoring

The full Storm Water Monitoring & Emissions to Sewer monitoring reports are attached in Appendix II

6.4. Bio-aerosol monitoring Results Summary

Bio-aerosol monitoring was carried out at the facility as per the conditions of the waste licence, W0131-02 on the 28 May 2009.

The bio-aerosol sampling was undertaken at three locations in the vicinity of the facility, detailed in Table 6.8. These locations were selected following a review of the prescribed sampling locations in the UK Composting Association's – *Standardises Protocol for the Sampling and Enumeration of Airborne Microorganisms at Composting Facilities, 1999.*

Table 6.8: Bioaerosol Monitoring Locations

Sample Location	Identity	Location
Location 1	SR 1/2 A/B	sensitive receptor (south of the GAA Club House to the NE of the site
Location 2	UW 1/2 A/B	Upwind boundary (30 m west of the site boundary)
Location 3	DW 1/2 A/B	Down wind location * (North of the GAA Club House to the NE of the site)

The summary results of bio-aerosol monitoring are presented in Table 6.9 & Table 6.10.

Table 6.9: Results of Total Bacteria Monitoring

Sampling Location	Time	Total No. of Colonies *(No.)*	Concentration *(cfu/m3)*
UW1A	11.20-11.45	12	17
SR1A	12.25-12.50	110	155.5
DW1A	13.45-14.10	180	254
UW2B	14.40-15.05	19	27
SR2B	15.20-15.45	244	345
DW2B	15.55-16.20	124	175.3

Table 6.10: Results of *Aspergillus* Monitoring

Sampling Loccation	Time	Total No. of Colonies *(No.)*	Concentration *(cfu/m3)*
UW1A	11.20-11.45	0	0
SR1A	12.25-12.50	1	1.4
DW1A	13.45-14.10	0	0
UW2B	14.40-15.05	0	0
SR2B	15.20-15.45	0	0
DW2B	15.55-16.20	0	0

Results of bio-aerosol monitoring indicate that bacterial levels were present a the down wind receptor (245 cfc/m^3), sensitive receptor (345 cfu/m^3) and upwind (27 cfu/m^3) locations for Total Bacteria.

Aspergillus fumigatus was not detected at the upwind and downwind locations, but was at the sensitive receptor at 1.4 cfu/m^3 during the monitoring event.

The full bio-aerosol report is attached in Appendix II

6.5. Groundwater monitoring Results Summary

In accordance with the requirements of the company's Waste Licence, W0131- 02, AES are required to conduct monitoring of the Groundwater underlying the Navan facility on a biannual basis.

During the monitoring period monitoring point GW-1 (tap located in the workshop), which was supplied by water from the Kilsaran well, was connected to the town mains as a means of water supply to the site. As there were no access to groundwater's on the AES site, a grab sample was extracted from a well via a tap (Kilsaran well) located in the neighbouring industrial facility. This would represent the quality of the groundwater's underlying the AES Navan facility.

A second sample from the county council water supply (GW-1) located in the garage within the AES facility was also extracted for comparison reasons as requested by AES personnel. The monitoring locations sampled are presented in Table 6.11.

Table 6.11: Groundwater Monitoring Locations

Sample Point	Location
Kilsaran (Groundwater)	(Kilsaran well) Tap on left hand wall in workshop in Kilsaran adjacent to AES
GW-1 (Groundwater)	Tap on right hand wall in workshop

Groundwater monitoring was undertaken in January and July 2009 and the results are presented in Table 6.12.

Table 6.12: Groundwater Monitoring Results

Parameter	Round 1		Round 2
	GW-1	Kilsaran	Kilsaran
pH (pH units)	7.4	8.0	7.7
Conductivity (µS/cm)	452	853	805
COD (mg/l)	11	<10	<10
Chloride (mg/l)	17	26	25.97
Fluoride (mg/l)	0.45	<0.01	<0.10
Ammonia – N (mg/l)	<0.02	<0.02	<0.02
* Total Nitrogen (mg/l)	3	<1	<1.00

Parameter	Round 1		Round 2
	GW-1	Kilsaran	Kilsaran
Nitrate as N (mg/l)	2.86	0.3	022
** Total Coliforms (MPN/ 100 ml)	0	0	37
**Faecal Coliforms (MPN/ 100 ml)	0	0	<10

* - Non INAB accredited test
** - Sub contracted test

Both monitoring results of both sampled did not present any of the USEPA 524.4 compound s. The full groundwater monitoring report is attached in Appendix II

6.6. Tank and Pipeline Testing & Inspection Reports

Condition 6.7 of the waste licence states:

The integrity and water tightness of all underground pipes and tanks and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee. The testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee

Integrity Testing of underground pipes and tanks scheduled for April 2010.

Condition 6.8 of the waste licence states:

The integrity of all concreted/hardstanding areas where waste is handled, deposited, processed, stored etc. shall be integrity assessed within twelve months of the date of grant of licence and thereafter at least annually and reported to the Agency as part of the AER. A written record of all integrity assessments and any maintenance or remedial work arising from them shall be maintained by the licensee.

Integrity Testing of the following bunds was carried out in February/April 2009 and found to be compliant.

1. Diesel Tank Bund
2. Diesel Filling Station Bund
3. Detergent Bund
4. Hydraulic Oil Storage Tank Bund – Garage Area
5. Oil Storage Tank Bund (Green) – Garage Area
6. Oil Storage Tank Bund (Blue) – Garage Area

The full reports have been previously furnished to the EPA.

6.7. Environmental Management Programme

The Environmental Management Program (EMP) will be maintained as part of the proposed schedule of objectives & Targets for the 2010 reporting period (See Table 5.2: Proposed schedule of Objectives and Targets for 2010). This includes the proposal for 2010 to acquire accreditation of the Environmental Management System (EMS) to ISO 14001.

7. SITE DEVELOPMENT/INFRASTRUCTURAL WORKS

7.1. Current Infrastructure in Place

The facility is currently licensed to accept a maximum of 95,000 tonnes of waste per annum (38,000 tonnes of Household waste, 33,250 tonnes of Commercial and Industrial waste and 23,750 tonnes of Construction and Demolition waste).

In compliance with Condition 3.19.3 of the Waste Licence, W0131-02 the facility has calculated the duty capacity and the standby capacity of the pant. This information is summarised in Table 7.1. The current waste handling and processing equipment is capable of handling 1752 tonnes/day and 2568 tonnes/day respectively.

Table 7.1: Summary list of plant & Machinery and the duty capacity and the standby capacity of the plant

Equipment	Standby	Maximum standby capacity
2 x industrial compactors	1 x standby compactor (can be utilised to compact newsprint and/or non-recoverable waste)	22 tonnes per hour each **528 tonnes/ day**
2 x Trommenlling line/ conveyor belt	Use of compactors on-site	20 tonnes per hour each **480 tonnes/ day**
1 x Baler	Use of compactors on-site	10 tonnes per hour **120 tonnes/ day**
1 x Bobcat	There is 1 Volvo Bobcat on-site	20 tonnes per hour **240 tonnes/ day**
3 x Hitachi & 1 x Grab	Grab lifts & Bobcats, Samsung on-site can be utilised	20 tonnes per hour each **720 tonnes/ day**
1 x Forklift	Bobcats on-site can be utilised	20 tonnes per hour **240 tonnes/ day**
Samsung grab	Bobcats, Hitachi/ Grabs can be utilised	30 tonnes per hour **360 tonnes/ day**
Conveyor belt	Floor manual sorting areas & bobcats	10 tonnes per hour **120 tonnes/ day**
" Volvo loading shovels & 1 Cat	Grabs on-site can be utilised	80 tonnes per day each **24 tonnes/ day**
2 x Shredders	Compactors on-site can be utilised	50 tonnes per hour each **1200 tonnes/ day**
Blender unit (used at the site for the mixing of material for the Vertical Composting Unit	Use of ejector trailers	10 tonnes per hour **120 tonnes/ day**
Vertical Composting Unit - VCU	Use of compactor & ejector trailers on-site	80 tonnes per week (Four chambers each handling 20 tonnes for a period of seven days)

7.2. Site Development Works during 2009

Midland Waste was not in a position to increase the area of hardstanding during 2009 as planned, because a decision on-site remediation work is pending from the Agency. New Dust Curtains were installed, however, a Dust Suppression System could not be installed during 2009 as a decision on site remediation work is pending from the Agency.

Further details on site development works undertaken during 2009 is presented in Table 5.1: Progress against Targets for 2009.

7.3. Proposed Development Works for 2010

Proposed development works for 2010 include increase the area of hardstanding in the yard to assist vehicular parking and the install upgraded Dust Suppression System within Waste Transfer Building.

Further details on site development works proposed for 2010are presented in Table 5.2: Proposed schedule of Objectives and Targets for 2010.

8. ENVIRONMENTAL LIABILITIES

The environmental liabilities (environmental damage and remedial actions) are those considered to be restricted to the confines of the facility at Midland Waste Disposal Co. Ltd., therefore, any costs incurred in addressing same will be limited to the removal and safe disposal of the waste remaining onsite following an emergency event (e.g. fire or spillage event) or decommissioning and closure of the site. Such environmental liabilities cover, should account for the cost of the clean up and removal of the maximum amount of waste that may be stored on-site at any given time.

AES (Ireland) Ltd. and Bord Na Mona (parent company) have arranged insurance cover to cover liability arising from damage to property and injury to parties as a result of sudden and unforeseen environmental impairment. AES (Ireland) Ltd. have insurance cover for "Business Interruption" and have adequate reserves for the cost of removing the maximum amount of waste that may be stored on-site at any given time and to ensure that said material is transported to an authorised and capable facility. In the unlikely event of full decommissioning, financial reserves are available to allow a formal surrender of the licence ensuring that the inherent environmental safeguard associated with this regulatory process is activated.

9. INCIDENTS & COMPLAINTS

9.1. Complaints Summary

All environmental incidents and complaints are recorded at the facility. No complaints were received by the site during the 2009 reporting period.

9.2. Reported Incidents Summary

Two incidents of dust levels elevated above licence limits, identified by the site during environmental monitoring were reported to the EPA during the reporting period.

One EPA site inspection was also carried out during the reporting period and a Site Inspection report (Inspection Reference No.: (W0131-02)09SI106JH) was issued. The facility responded to this on the 8 December 2009 (Reference: Midland Waste Disposal Co. Ltd. W0131-2: Response to Notification of Non-Compliance).

Full details of the reported incidents are included in Appendix III.

9.3. Accident Prevention and Emergency Response

Condition 9.1 of the waste licence states:

The licensee shall, within six months of date of grant of this licence, ensure that a documented Accident Prevention Policy is in place which will address the hazards on-site, particularly in relation to the prevention of accidents with a possible impact on the environment. This procedure shall be reviewed annually and updated as necessary.

Condition 9.2 of the waste licence states:

The licensee shall, within six months of date of grant of this licence, ensure that a documented Emergency Response Procedure is in place which shall address any emergency situation which may originate on-site. This Procedure shall include provision for minimising the effects of any emergency on the environment. This procedure shall be reviewed annually and updated as necessary.

The accident prevention and emergency response has been prepared as part of the Environmental Management Program for the site and is included in full in Appendix V.

10. FACILITY MANAGEMENT

10.1. Management & Staffing Structure

The management and staffing structure of the facility is as follows:-

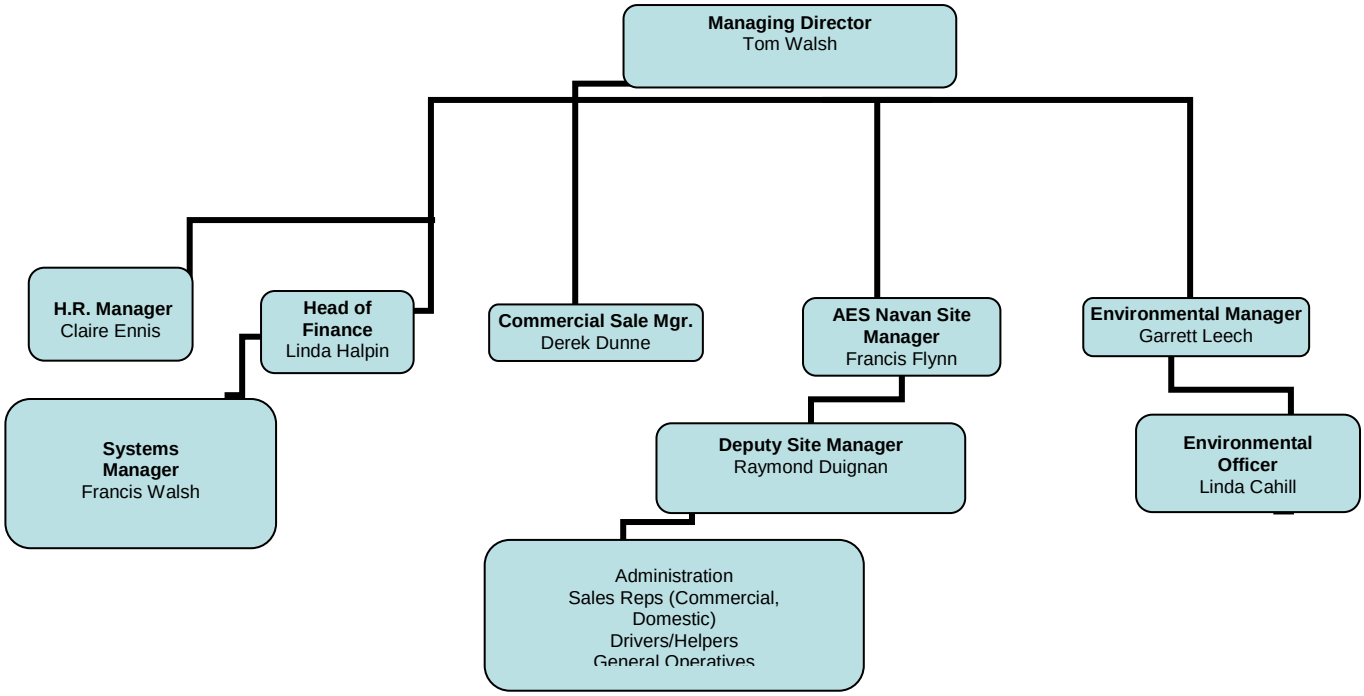


Figure 10.1: Environmental Organisation Structure

10.2. Public Information Programme

A Procedure for the Processing of Enquiries with regard to Environmental Performance On-Site is in place to ensure that members of the public can obtain information concerning the environmental performance of the site. This is copied below:

Purpose:

The purpose of this procedure is to install a programme to ensure that members of the public can obtain information concerning the environmental performance of this site at all reasonable times (Condition 2.2.2.7 Waste Licence 131-02).

Scope:

The scope of this procedure is in compliance with Waste Licence 131-02 and general environmental performance on-site.

Procedure:

All calls regarding the environmental performance of the plant are directed to the Facility Manager.

All enquiries regarding environmental performance are logged on the Environmental Request for Information Form (EPF 8.1). This form shall include at a minimum;
(a) Date of enquiry
(b) Time of Enquiry
(c) Name of enquirer
(d) Nature of enquiry
(e) Record of request for site visit
(f) Record of request for site tour
(g) Record of request access to documentation
(h) Signature of receiver of enquiry

The site manager shall with all due expedience make available information on the public file.

The public file shall contain;
(a) Annual Environmental Report
(b) Monthly Compliance Reports
(c) EPA correspondence
(d) Environmental Schedule of Objectives and Targets.

All site tours associated with an enquiry will be scheduled within one working week on receipt of request. In exceptional circumstances it may be arranged at shorter notice.

On arrival at the plant the visitor(s) will be greeted at reception and asked to sign in. All relevant personnel will be contacted with regard to the arrival on-site. These personnel will include at a minimum either the General Manager or the Operational Manager.

Should a site tour not be requested the visitor(s) shall be provided the opportunity to review the public file in an office on their own. The member of staff guiding the tour will direct the participant (s) to the fire muster point for the eventuality of a fire evacuation being necessary.

The member of staff guiding the tour will distribute high visibility clothing and safety glasses to the visitors(s).

At all times the visitor(s) will be accompanied by a member of staff for Health & Safety purposes and also to answer any queries that may arise. Following the completion of the site tour, the visitor will be provided the opportunity to review the public file in an office on their own.

On completion of the review of the public file the visitor (s) will have the opportunity to discuss any queries with the General Manager or Operational Manager. The visitor (s) may also log a complaint at this stage if they require so. Subject to a complaint being logged an Environmental Complaints Procedure will be implemented by the General Manager.

If the visitor(s) is satisfied on completion of the site visit process, they shall complete an Environmental Site Visit Registration Form (EPF 8.2).

Responsibility:

The Facility Manager or other responsible person authorised by the Facility Manager is responsible for the implementation of the above procedure.

Relevant Documentation:

Environmental Request for Information Form (EPF 8.1)
Environmental Site Visit Registration Form (EPF8.2)
Environmental Complaints Procedure (EP7.0)
Environmental Complaints Assessment Form (EPF7.1)
Environmental Corrective & Preventive Action Procedure (EP1.0)
Environmental Corrective & Preventative Action Form (EPF1.1)

10.3. New Procedures Developed During 2009

No new procedures were developed for the site during the reporting period.

10.4. Review of Nuisance Controls

Cannon Environmental is employed as pest control contractors by AES Navan. The pest control contractor has bated the site and set up an inspection schedule to visit the site approximately once a month and carry out inspections, and servicing of poison bait boxes which are installed around the site.

No amendments to the nuisance control procedure for the site are proposed for 2010.

Appendix I

Drawings


Simonstown
Proudstown
Cross Ros
33MP
LC
52
R162
Donaghmore
Domhnach Mór
Windtown
Batterstown
Donaghmore
Church and
Round Tower
Clonmagaddan
66
55
54
LC
Blackcastle
An Caisleán Dubh
Canal
River Boyne
PO
Nevinstown
32MP
LC
stlemount
Abbeyland
86
87
88
89
Schs
Schs

Appendix II

Monitoring Results

MONITORING OF AMBIENT NOISE LEVELS AT THE ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD. SITE AT PROUDSTOWN RD, NAVAN, CO. MEATH IN ACCORDANCE WITH WASTE LICENCE REGISTER NO. W0131-02

For the Attention of:
Ms. Linda Cahill
Environmental Officer
Advanced Environmental Solutions (Ireland) Ltd.
Unit 1 Monread Road
Naas
Co. Kildare

Prepared by:
Ms. Josephine Chadwick
Environmental Scientist

Reviewed by:
Mr. Peter Coogan
Monitoring Team Leader

Ref: **ECS3307-Noise**
Date: **April 2009 (Annual)**

EXECUTIVE SUMMARY

In accordance with the requirements of the company's Waste Licence (Register No. W0131-02), Advanced Environmental Solutions (AES) Ltd., are required to conduct annual noise monitoring at six locations at their site in Proudstown, Navan, Co. Meath on an annual basis. The site was subsequently visited by a Bord na Móna Environmental Scientist on the 23rd of April to conduct the annual monitoring survey for 2009.

$L(A)_{Leq}$, $L(A)_{10}$, $L(A)_{90}$ values and 1/3 Octave band analysis was determined at all six monitoring locations (N1-N6), four boundary locations and two noise sensitive locations. The daytime L_{eq} recorded at the four boundary locations ranged from 48.2 dB(A) at N3 to 61.2 dB(A) at N4. The daytime L_{eq} recorded at the noise sensitive location N5 was 51.0dB(A) and 49.8dB(A) at N6.

Elevated noise levels were noted at two of the four boundary locations (N1 and N4) during the 2009 noise monitoring survey. The main source of noise recorded at boundary locations N1 and N2 were, for the most part, due to off-site activities and trucks on the main access road to the AES Ltd. facility and Kilsaran. A greater part of the noise levels recorded at N3 and N4 are considered to be due to AES Ltd. activities. Tonal noise was not detected at any of the boundary locations.

The noise levels recorded at the two noise sensitive locations N5 (51dB(A)) and N6 (49.8dB(A)) were below the licence limit of 55 dB(A), as specified in Waste Licence W0131-02. The dominant sources of noise at these locations originated from off-site sources such as passing traffic, barking dogs and general residential activities. No audible noise was noted from the AES Ltd. facility at N5. At the N6 noise sensitive location, intermittent beeping of reversing machinery was audible, however it was hard to distinguish as to weather its was from the AES or Kilsaran facility. Tonal noise was not detected at either of the noise sensitive locations.

Respectively Submitted,

Ms. Josephine Chadwick
Environmental Scientist

Mr. Peter Coogan
Monitoring Team Leader

TABLE OF CONTENTS

1.0 INTRODUCTION

AES Ltd. operates and manages a waste recycling facility at Clonmagaddan, Navan, Co. Meath.

In compliance with the requirements stipulated in schedules B and C of Waste Licence No. W0131-02, AES Ltd. is required to

a) Carry out a noise survey of the site operations annually

b) Determine ambient noise levels at locations as set out in C.5 of the waste licence. Table B.4 specifies the monitoring frequency and parameters to be determined consisting of:

LA_{LEQ} (30minutes)
LA_{10} (30 minutes)
LA_{90} (30 minutes)
Frequency Analysis (1/3 Octave band analysis)

c) Ensure that activities on-site shall not give rise to noise levels off site, at any noise sensitive location, which exceed the following sound pressure limits (L_{Aeq}, 30 minute):

Daytime 55 dB A

Bord na Móna Technical Services was contracted to conduct this noise assessment and subsequently visited the site to conduct the 2009 noise monitoring event. The AES Ltd. facility only operates during the daytime hours (0800 – 2200 hours). This report presents details of both the methodologies employed and results obtained.

2.0 METHODOLOGIES

2.1 Measurement Parameters

2.1.1 L_{eq} Values

$L_{eq}(t)$ values represent the continuous equivalent sound level over a specified time (t). This value expresses the average levels over time and is a linear integral.

2.1.2 Max P Values

The Max P values represent the maximum sound pressure level produced by a source during the monitoring period.

2.1.3 L_{90} and L_{10} Values

The L_{90} and L_{10} values represent the sound levels exceeded for a percentage of the instrument measuring time. L_{10} indicates that for 10% of the monitoring period, the sound levels were greater than the quoted value. L_{10} is a good statistical parameter for expressing event noise such as passing traffic. The L_{90} represents post event sound levels and is a good indicator of background noise levels.

2.2 Tonal and Impulsive Characteristics

For the purpose of this report, tonal noise is characterised in accordance with ISO 1996-2, which indicates that a noise source being tonal at a particular frequency is either clearly audible or exceeds the level of the adjacent bands by 5dB or more.

An impulsive noise is of short duration (typically less than one second), it is brief and abrupt, its' startling effect causes greater annoyance than would be expected from a simple measurement of sound pressure level. For example an instantaneous bang/thud that maybe associated with pile driving, hammering etc.

2.3 Standards and Guidance

The acoustic assessment and subsequent report are in accordance with International Standard Organisation (ISO) 1996 Acoustics – Description and Measurement of Environmental Noise Part 1, 2, and 3 in addition to the Environmental Protection Agency Integrated Pollution Control Licensing Guidance Note for Noise In Relation To Scheduled Activities.

2.4 Site information

2.4.1 All measurements were taken at 1.5 m height above local ground level and 1-2 m away from reflective surfaces.

2.4.2 The weather was calm dry and sunny at the time of the assessment.

2.4.3 Table 2.1 describes the locations of the monitoring positions for the annual noise monitoring assessment.

2.4.4 All noise measurements were sampled for the license stipulated minimum time period of 30 minutes.

2.4.5 Sampling Locations

Table 2.1 presents details of the noise monitoring locations. Map locations provided in Appendix 2.

TABLE 2.1 : LOCATION OF NOISE MONITORING MEASUREMENTS

Map Reference No.	*Location Type*	*Geographical location from the site centre*
N1	Boundary	North Eastern corner
N2	Boundary	North Western corner
N3	Boundary	South Western corner
N4	Boundary	South Eastern site corner
N5	Noise Sensitive Location	North East of the site (GAA Ground)
N6	Noise Sensitive Location	South of the site (Housing Estate)

3.0 INSTRUMENTATION EQUIPMENT USED

The following equipment was employed during the acoustic assessment on the 23rd of April 2009.

Bruel & Kjaer Real-Time Noise Analyzer Type 2260 Observer with Sound Analysis Software BZ 7210:

Model No: 2260	Serial No. 2418359
Date of Certificate and Calibration	19th of February 2008
Microphone Type: B&K 4936	Serial No: 2417709
Date of Certificate and Calibration:	19th February 2009
Tripod	

On site Calibration

The instrument was calibrated immediately before and after the measurement periods with no drift in calibration level noted.

4.0 RESULTS

Table 4.1 presents the results of the noise monitoring survey carried out at the AES Ltd. waste management facility during normal daytime activities. Map locations provided in Appendix 2.

TABLE 4.1: NOISE MEASUREMENT RESULTS

Location No.	Measurement Period	Sampling Time	L_{eq} dB(A)	L_{10} dB(A)	L_{90} dB(A)	L_{AFMax} dB(A)
N1	30	17:02	56.8	56.6	49.8	84.3
N2	30	14:23	54.8	56.5	50.1	79.2
N3	30	14:58	48.2	50.6	44.5	66.2
N4	30	15:33	61.2	63.6	54.6	80.2
N5 *(NSL)*	30	16:09	51.0	53.5	45.8	72.4
N6 *(NSL)*	30	12:14	49.8	52.7	41.2	72.6

5.0 DISCUSSION

Noise monitoring was undertaken at 4 boundary locations and 2 noise sensitive locations, at the AES Ltd. facility in Proudstown, Navan, Co Meath. The monitoring of noise emissions was carried out as part of the requirements of the EPA Waste Licence W0131-02.

Noise emissions arising from normal daytime site operations should not result in exceedance of the noise limit of 55 dB(A) at any of the nearest noise sensitive locations.

Table 4.1 presents daytime noise measurements undertaken at the six monitoring locations for the 2009 monitoring event, 4 boundary and 2 noise sensitive locations.

Daytime Noise Measurements

Boundary Locations:

During the noise survey the site boundary L_{eq} levels (N1-N4) determined ranged from 48.2 dB(A) at N3 – 61.2 dB(A) at N4.

N1 is located at the North Eastern corner of the site (car park entrance). The L_{eq} level recorded at N1 was 56.8 dB(A). The AES facility was audible (Generators, some banging of waste in recycling shed, the loading and offloading of waste bins in the yard and machinery operating around the facility) but not considered to be the main source of noise as traffic on the main access road to both the AES facility and Kilsaran quarry was dominant. Other sources of noise include people talking and intermittent beeping of machinery in the yard. Tonal noise was not detected at this location.

N2 is located at the North Western corner (behind the work shop). The L_{eq} level at N2 was 54.8 dB(A). Onsite observations indicate that the main sources of noise audible at this location were the intermittent beeping of reversing machinery, machinery operating on the Kilsaran site and truck movement on the Kilsaran site. Other audible noise included an extraction fan operating at the back of the workshop and noise from engines running idle in the workshop. No tonal noise was detected at this location.

N3 is located at the South Western corner of the AES facility. The L_{eq} level recorded at N3 was 48.2 dB(A). This represents the lowest L_{eq} recorded for the boundary locations. The main source of noise at this location originated from the external road to and around Navan town. Some noise from recycling equipment was audible from the AES site but not considered loud. Other sources of noise include bird singing through out the 30 min monitoring period. No tonal noise was detected at this location.

N4 is located on the South Eastern corner of the site. N4 represents the highest L_{eq} level recorded at the boundary locations with a L_{eq} of 61.2 dB(A). N4 is located close to the main activities on-site. The primary noise detected at location N4 consisted of; trucks loading and offloading bins within the waste transfer station, trucks moving around the site and screening machines operating within the AES recycling shed. Other noise sources on-site included intermittent beeping from reversing machinery. As can be seen from table 4.1, the the L_{90} value would suggest that for 90% of the 30 minute monitoring period, the average L_{eq} level was 54.6 dB(A). The relatively large L_{AFMax} value of 80.2dB(A) would suggest that loud intermittent noise from the loading and off-loading of waste bins would have contributed largely to noise levels and increased the average noise level. Tonal noise was not detected at this location.

Noise Sensitive Locations

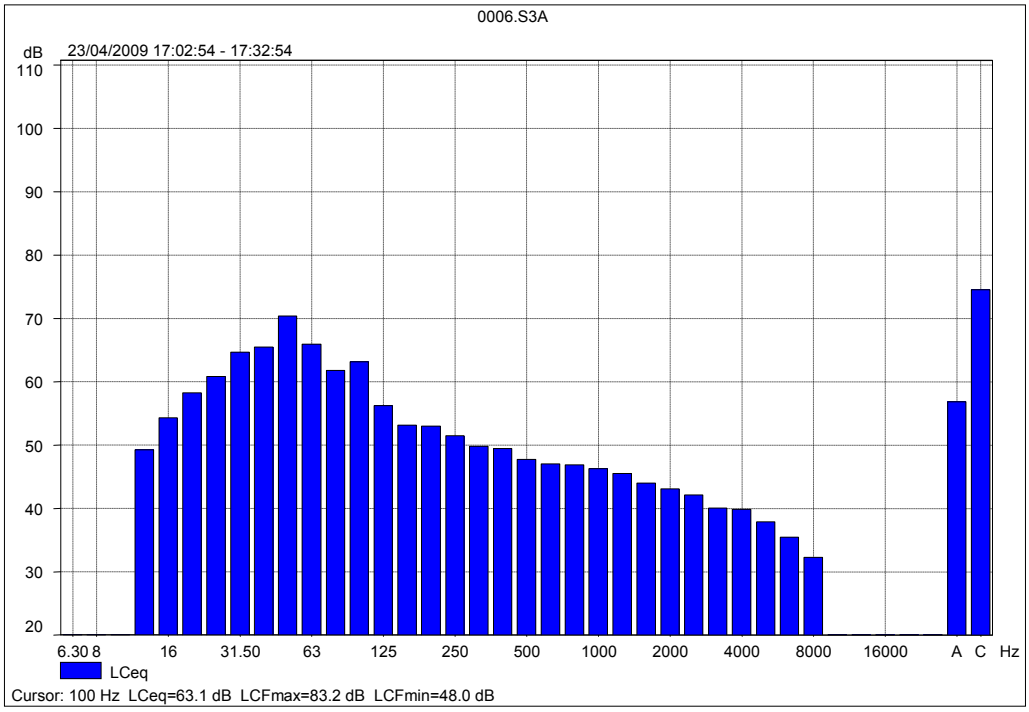
N5 is located North East of the site (GAA grounds). The L_{eq} level recorded at N5 was 51.0 dB(A). This value complies with the ELV guideline limit of 55 dB(A) as specified in Waste Licence W0131-02. Contributory sources of noise at this location included; noise from traffic on all the surrounding roads, cement trucks accessing the Kilsaran sites, an angle grinder operating in the workshop adjacent to the GAA club, traffic movement around the GAA grounds, children playing in the crèche in the GAA grounds and birds singing. No noise was audible from the direction of the AES facility. Tonal noise was not detected at this noise sensitive location.

N6 is located South of the site (Housing estate). The L_{eq} level recorded at N6 was 49.8 dB(A). This complies with the ELV guideline limit of 55 dB(A) as specified in Waste Licence W0131-02. The main noise source audible at this location was the movement of traffic through the housing estate. Other noise sources comprised of passing traffic on roads to the south of the estate, children playing, house alarms and dogs barking within the housing estate. Intermittent beeping of reversing machinery was also audible but it was not clear if the noise originated from the AES site or the neighbouring Kilsaran site. At this location no tonal noise was detected.

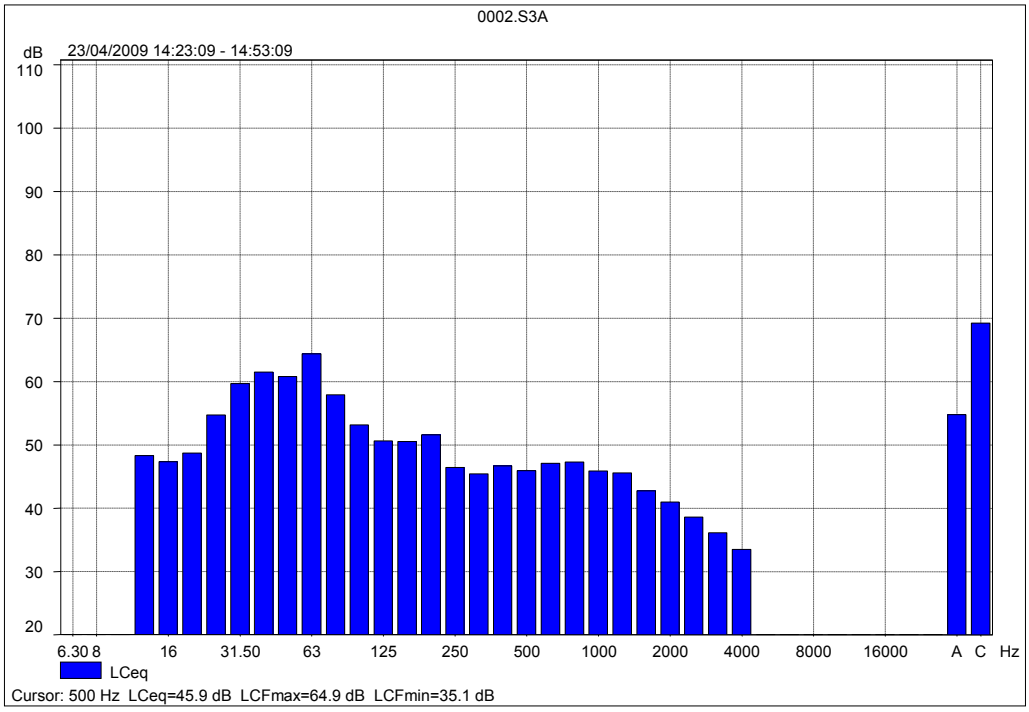
Appendix 1

$^1/_3$ Octave Tonal Graphs

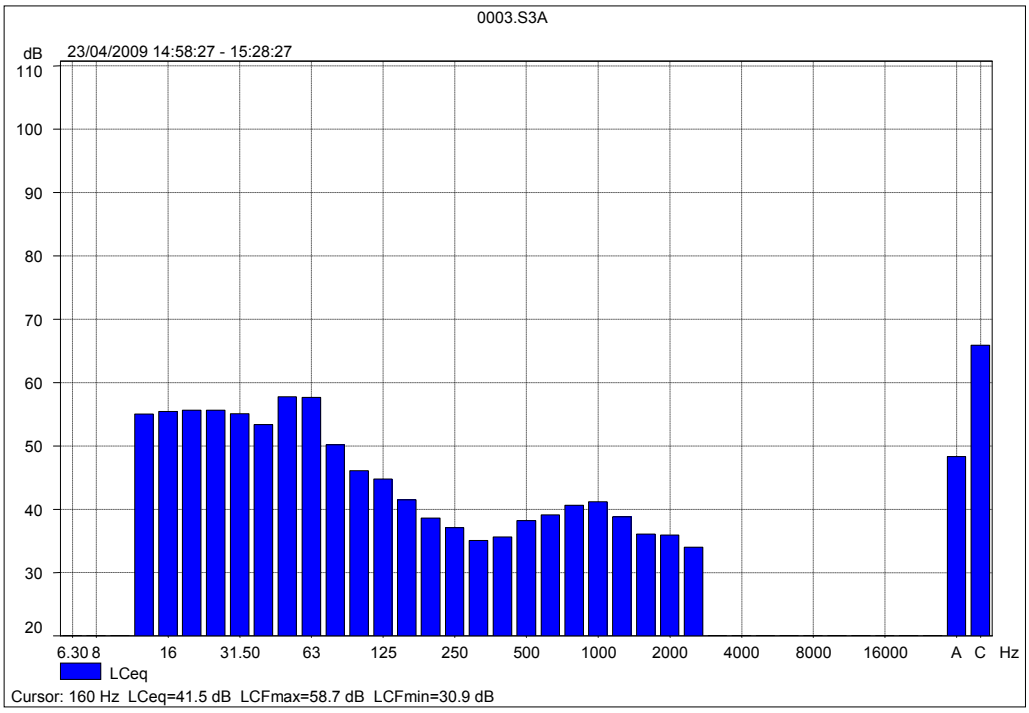
N1 $^{1}/_{3}$ Octave Tonal Graphs



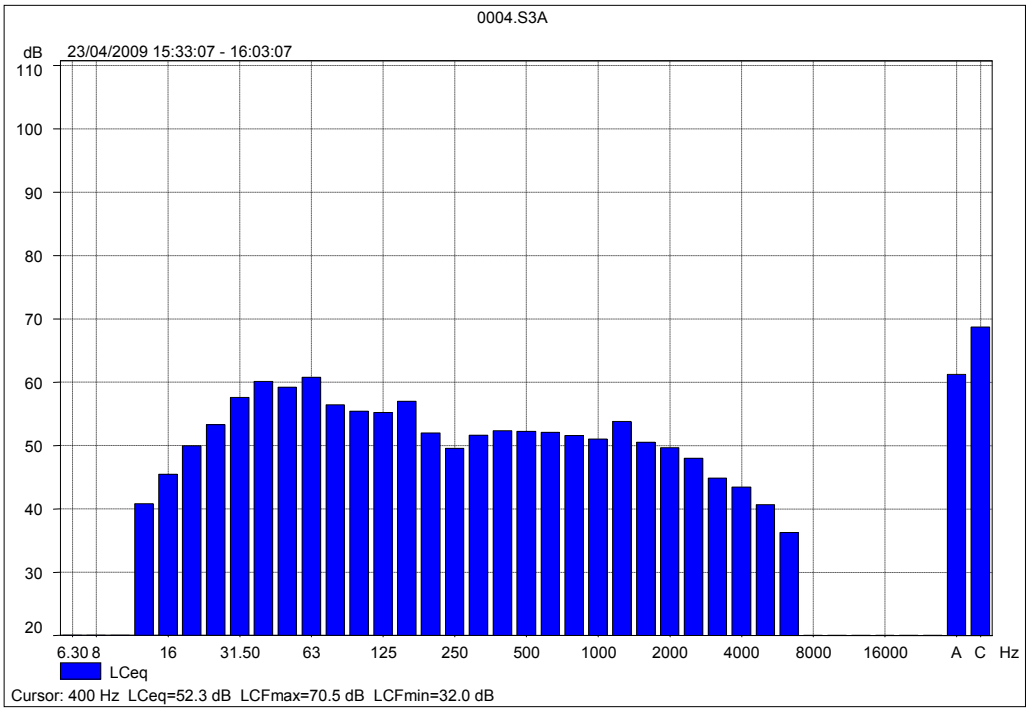
N2 $^{1}/_{3}$ Octave Tonal Graphs



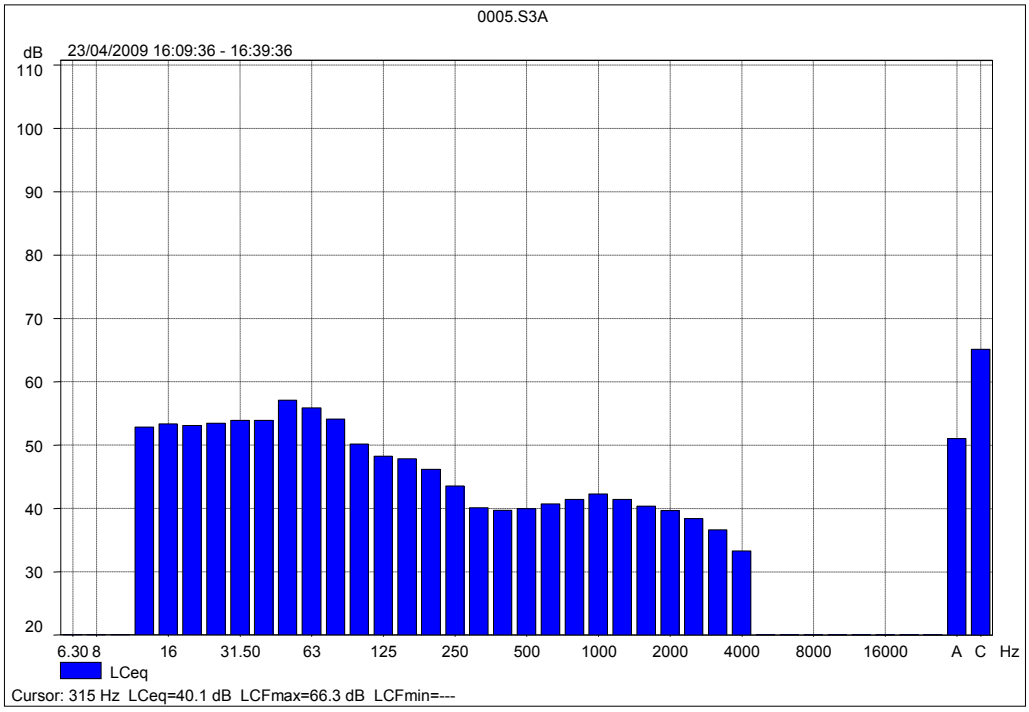
N3 $^{1}/_{3}$ Octave Tonal Graphs



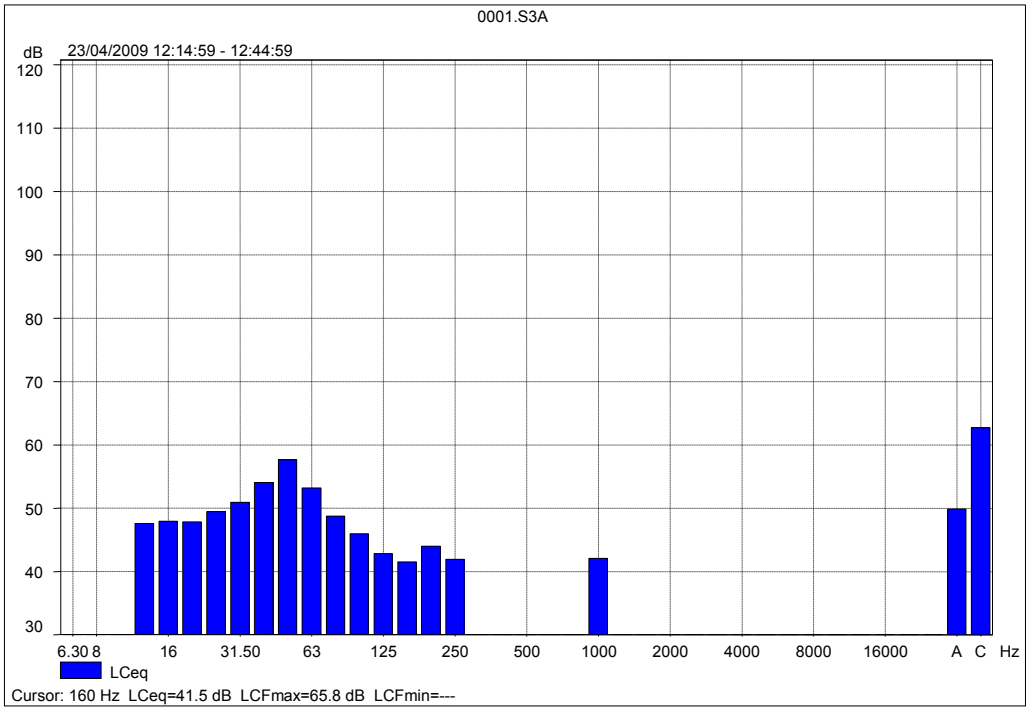
N4 $^{1}/_{3}$ Octave Tonal Graphs



N5 $^{1}/_{3}$ Octave Tonal Graphs Noise Sensitive Location



N6 $^{1}/_{3}$ Octave Tonal Graphs Noise Sensitive Location



Appendix 2

Map Indicating Noise Monitoring Locations

DUST DEPOSITION MONITORING AT THE ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD. SITE AT PROUDSTOWN RD, NAVAN, CO. MEATH IN ACCORDANCE WITH THE REQUIREMENTS OF THEIR WASTE LICENCE, REGISTER NO. W0131-02

For the Attention of:
Ms. Linda Cahill
Environmental Officer
Advanced Environmental Solutions (Ireland) Ltd.
Unit 1 Monread Commercial Park
Naas
Co. Kildare

Prepared by:
Ms. Josephine Chadwick
Environmental Scientist

Reviewed by:
Mr. Peter Coogan
Monitoring Team Leader

Report No: ECS3227-Dust
Reporting period: January/ February 2009
Date: April 2009

Executive Summary / Certification of Results

Bord na Móna Technical Services was commissioned by Advanced Environmental Solutions Ltd. (AES) to conduct dust deposition and directional dust monitoring at selected locations within the facility.

This sampling was conducted in accordance with the company's Waste Licence (Register No. W0131-02) sampling programme. Fifteen directional gauges and four deposition gauges were exposed for a 30 day period between the 14th January 2009 and the 12th February 2009. The dust samples were returned to the laboratory for subsequent analysis.

The directional dust gauge at the D1-S monitoring location was not exposed as it faces directly into a cliff at the back of the AES site and results would not be representative of activities in that area.

The Waste Licence limit for dust deposition is given as 350mg/m^2/day as per schedule B5 of the Waste Licence.

This report is certified as accurate and representative of the sampling and associated analysis carried out.

Respectively Submitted,

Ms. Josephine Chadwick	Mr. Peter Coogan
Environmental Scientist	Monitoring Team Leader

TABLE OF CONTENTS

1.0 INTRODUCTION

In compliance with the requirements of their Waste Licence, Register No. W0131-02 (Schedule C.6) AES are required to monitor dust deposition and dust direction from their facility at Proudstown, Navan, Co. Meath three times per year. Dust deposition is monitored by the German standard method VDI 2119 (Bergerhoff). Directional dust is monitored in accordance with British Standard BS 1747 using directional dust gauges.

Bord na Móna Technical Services was commissioned to perform the sampling and analysis. The site was visited by a Bord na Móna Environmental Scientist on the 14th of January 2009 to install dust gauges for dust deposition and directional dust monitoring. The dust gauges were exposed for a 30 day period prior to being collected on the 12th of February 2009. All dust samples were returned to the laboratory for analysis.

This report details the sampling and analytical methodologies adopted.

2.0 METHODOLOGY

2.1 Dust Monitoring Locations

Dust deposition and dust direction samples were taken at four locations within the site boundary. Table 2.1 below describes the sampling locations which are accurately marked on the environmental monitoring map locations attached in Appendix 1.

TABLE 2.1: LOCATION OF DUST MONITORING POSITIONS

Sample Name	Grid Co-ordinates	Location
D1	286877E, 269773N	*Back of site (Southeast)*
D2	286777E, 269892N	*Front of Site (Adjacent to road) (Northwest)*
D3	286814E, 269889N	*Front of Site (Adjacent to road) (North)*
D4	286882E, 269871N	*Located in Car Park (Northeast)*

2.2 Sampling

2.2.1 Dust Deposition

The Bergerhoff Dust Deposition Gauges used for this sampling survey consist of a plastic collecting vessel and a stand with a protective cage. Each vessel was placed in the metal basket which was positioned at a height of between 1.5 and 2 meters above ground level according to the German Standard Method VDI 2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute).

Prior to sampling, the collecting vessels were carefully cleaned with laboratory detergent, rinsed with deionised water and allowed to dry. Following exposure, the sample bottles were securely capped and returned to the laboratory for analysis.

2.2.2 Dust Direction

Dust direction monitoring was conducted using directional dust gauges conforming to the British Standard BS 1747; Part 5. Each gauge measures the lateral flux through four vertical slots to collectors arranged on a vertical support. Each complete directional dust gauge assembly is comprised of:

- One vertical supporting post set at 150mm above ground level,
- Four collecting heads set at 90° to each other, and
- Four collecting bottles attached to the collecting heads.

Prior to sampling, the collecting vessels were carefully cleaned with laboratory detergent, rinsed with deionised water and allowed to dry. Sampling involved placing the labelled containers in the protective cages. Following exposure, the sample bottles were securely capped and returned to the laboratory for analysis.

2.3 Analysis

All samples returned to the laboratory were stored at 2-8°C. Subsequent analysis of all samples was carried out gravimetrically for dust and strictly followed the standard VDI 2119. The results are expressed in $mg/m^2/day$.

3.0 COMMITMENT TO QUALITY

3.1 INAB Accreditation

Bord na Móna Technical Services analytical laboratories is accredited to ISO 17025 by the National Accreditation Board (INAB). ISO 17025 accreditation ensures that the laboratory operates a quality system with technically competent staff. The laboratory has accreditation since 1997 and it is the policy of the laboratory to achieve and maintain a high standard of quality consistent with client's requirements in all aspects of the work carried out within the laboratory.

3.2 Interlaboratory Proficiency Schemes

To ensure the accuracy of the analytical testing the laboratory participates in several external proficiency schemes. The ongoing competence of the laboratory and its staff is assessed by participation in various inter-laboratory proficiency testing schemes, such as LGC Aquacheck scheme and the EPA Intercalibration programme organised for environmental laboratories throughout Ireland. Bord na Móna Environmental Consultancy & Laboratory Services Analytical Laboratory is listed on the EPA's register of Quality Controlled Laboratories

3.3 Control Chain of Custody

As part of the Quality System in place at Bord na Móna Environmental Ltd., measures are taken to ensure controlled chain of custody. An outline of the chain of custody is given below.

BORD NA MÓNA

CONTROLLED CHAIN OF CUSTODY

SITE		TRANSPORT		LABORATORY
Sampling and packaging of all samples were carried out by Bord na Móna Technical Team:	Transport Document Form	Transport to laboratory by Bord na Móna Technical Team.	Sample Reception Form	Receiving of samples at Bord na Móna Environmental Laboratory complex: Laboratory Manager (Secure laboratory complex access to authorised personnel only)
Mr. Peter Coogan	→		→	↓
				Storage of all samples for 1 month period after report issue.
				↓
				Supervised Disposal

4.0 RESULTS

The results of the dust deposition and direction survey which was carried out from the 14th of January to the 12th of February 2009 at AES Ltd. Navan facility are presented in Table 4.1 and Table 4.2 below.

The Waste Licence limit for dust deposition is given as 350mg/m^2/day as per Schedule B5 of the Waste Licence.

TABLE 4.1: RESULTS OF DUST DEPOSITION MONITORING

Sampling Location Number	Deposition Rate (mg/m^2/day)	***Waste Licence Dust Deposition Limit (mg/m^2/day)***
D1	90	***350***
D2	129	***350***
D3	140	***350***
D4	45	***350***

TABLE 4.2: RESULTS OF DIRECTIONAL DUST MONITORING

Sample Name	**Deposition Rate (mg/m^2/day)**
D1-N	57
D1-S	**Note 1**
D1-E	37
D1-W	44
D2-N	63
D2-S	78
D2-E	72
D2-W	26
D3-N	131
D3-S	72
D3-E	153
D3-W	176
D4-N	92
D4-S	57
D4-E	63
D4-W	50

As can be seen in Tables 4.1 and 4.2, dust deposition levels at all monitoring locations do not exceed the licence limit of 350mg/m^2/day as per Schedule B5 of Waste Licence Register No. W0131-02.

Note 1: The directional dust gauge at the D1-S monitoring location was not exposed as it faces directly into a cliff at the back of the AES site and results would not be representative of activities in that area.

APPENDIX 1

Map of Monitoring Locations

DUST DEPOSITION MONITORING AT THE ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD. SITE AT PROUDSTOWN RD, NAVAN, CO. MEATH IN ACCORDANCE WITH THE REQUIREMENTS OF THEIR WASTE LICENCE, REGISTER NO. W0131-02

For the Attention of:
Ms. Linda Cahill
Environmental Officer
Advanced Environmental Solutions (Ireland) Ltd.
Unit 1 Monread Commercial Park
Naas
Co. Kildare

Prepared by:
Mr. Peter Coogan
Monitoring Team Leader

Reviewed by:
Mr. Ronan Connolly
Environmental Scientist

Report No: ECS3307-Dust
Reporting period: April/ May 2009
Date: June 2009

Executive Summary / Certification of Results

Bord na Móna Technical Services was commissioned by Advanced Environmental Solutions Ltd. (AES) to conduct dust deposition and directional dust monitoring at selected locations within the facility.

This sampling was conducted in accordance with the company's Waste Licence (Register No. W0131-02) sampling programme. Fifteen directional gauges and four deposition gauges were exposed for a 28 day period between the 30th April 2009 and the 28th May 2009. The dust samples were returned to the laboratory for subsequent analysis.

The directional dust gauge at the D1-S monitoring location was not exposed as it faces directly into a cliff at the back of the AES site and results would not be representative of activities in that area.

The Waste Licence limit for dust deposition is given as 350mg/m^2/day as per schedule B5 of the Waste Licence.

This report is certified as accurate and representative of the sampling and associated analysis carried out.

Respectively Submitted,

Mr. Peter Coogan	Mr. Ronan Connolly
Monitoring Team Leader	Environmental Scientist

TABLE OF CONTENTS

1.0 INTRODUCTION

In compliance with the requirements of their Waste Licence, Register No. W0131-02 (Schedule C.6) AES are required to monitor dust deposition and dust direction from their facility at Proudstown, Navan, Co. Meath three times per year. Dust deposition is monitored by the German standard method VDI 2119 (Bergerhoff). Directional dust is monitored in accordance with British Standard BS 1747 using directional dust gauges.

Bord na Móna Technical Services was commissioned to perform the sampling and analysis. The site was visited by a Bord na Móna Environmental Scientist on the 30th of April 2009 to install dust gauges for dust deposition and directional dust monitoring. The dust gauges were exposed for a 28 day period prior to being collected on the 28th of May 2009. All dust samples were returned to the laboratory for analysis.

This report details the sampling and analytical methodologies adopted.

2.0 METHODOLOGY

2.1 Dust Monitoring Locations

Dust deposition and dust direction samples were taken at four locations within the site boundary. Table 2.1 below describes the sampling locations which are accurately marked on the environmental monitoring map locations attached in Appendix 1.

TABLE 2.1: LOCATION OF DUST MONITORING POSITIONS

Sample Name	Grid Co-ordinates	Location
D1	286877E, 269773N	*Back of site (Southeast)*
D2	286777E, 269892N	*Front of Site (Adjacent to road) (Northwest)*
D3	286814E, 269889N	*Front of Site (Adjacent to road) (North)*
D4	286882E, 269871N	*Located in Car Park (Northeast)*

2.2 Sampling

2.2.1 Dust Deposition

The Bergerhoff Dust Deposition Gauges used for this sampling survey consist of a plastic collecting vessel and a stand with a protective cage. Each vessel was placed in the metal basket which was positioned at a height of between 1.5 and 2 meters above ground level according to the German Standard Method VDI 2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute).

Prior to sampling, the collecting vessels were carefully cleaned with laboratory detergent, rinsed with deionised water and allowed to dry. Following exposure, the sample bottles were securely capped and returned to the laboratory for analysis.

2.2.2 Dust Direction

Dust direction monitoring was conducted using directional dust gauges conforming to the British Standard BS 1747; Part 5. Each gauge measures the lateral flux through four vertical slots to collectors arranged on a vertical support. Each complete directional dust gauge assembly is comprised of:

- One vertical supporting post set at 150mm above ground level,
- Four collecting heads set at 90° to each other, and
- Four collecting bottles attached to the collecting heads.

Prior to sampling, the collecting vessels were carefully cleaned with laboratory detergent, rinsed with deionised water and allowed to dry. Sampling involved placing the labelled containers in the protective cages. Following exposure, the sample bottles were securely capped and returned to the laboratory for analysis.

2.3 Analysis

All samples returned to the laboratory were stored at 2-8°C. Subsequent analysis of all samples was carried out gravimetrically for dust and strictly followed the standard VDI 2119. The results are expressed in $mg/m^2/day$.

3.0 COMMITMENT TO QUALITY

3.1 INAB Accreditation

Bord na Móna Technical Services analytical laboratories is accredited to ISO 17025 by the National Accreditation Board (INAB). ISO 17025 accreditation ensures that the laboratory operates a quality system with technically competent staff. The laboratory has accreditation since 1997 and it is the policy of the laboratory to achieve and maintain a high standard of quality consistent with client's requirements in all aspects of the work carried out within the laboratory.

3.2 Interlaboratory Proficiency Schemes

To ensure the accuracy of the analytical testing the laboratory participates in several external proficiency schemes. The ongoing competence of the laboratory and its staff is assessed by participation in various inter-laboratory proficiency testing schemes, such as LGC Aquacheck scheme and the EPA Intercalibration programme organised for environmental laboratories throughout Ireland. Bord na Móna Technical & Laboratory Services Analytical Laboratory is listed on the EPA's register of Quality Controlled Laboratories

3.3 Control Chain of Custody

As part of the Quality System in place at Bord na Móna Technical Services., measures are taken to ensure controlled chain of custody. An outline of the chain of custody is given below.

BORD NA MÓNA

CONTROLLED CHAIN OF CUSTODY

SITE		TRANSPORT		LABORATORY
Sampling and packaging of all samples were carried out by Bord na Móna Technical Team:	Transport Document Form	Transport to laboratory by Bord na Móna Technical Team.	Sample Reception Form	Receiving of samples at Bord na Móna Environmental Laboratory complex: Laboratory Manager (Secure laboratory complex access to authorised personnel only)
Mr. Peter Coogan	→		→	↓
				Storage of all samples for 1 month period after report issue.
				↓
				Supervised Disposal

4.0 RESULTS

The results of the dust deposition and direction survey which was carried out from the 30th of April to the 28th of May 2009 at AES Ltd. Navan facility are presented in Table 4.1 and Table 4.2 below.

The Waste Licence limit for dust deposition is given as 350mg/m^2/day as per Schedule B5 of the Waste Licence.

TABLE 4.1: RESULTS OF DUST DEPOSITION MONITORING

Sampling Location Number	Deposition Rate (mg/m^2/day)	***Waste Licence Dust Deposition Limit (mg/m^2/day)***
D1	90	***350***
D2	78	***350***
D3	782	***350***
D4	72	***350***

TABLE 4.2: RESULTS OF DIRECTIONAL DUST MONITORING

Sample Name	**Deposition Rate (mg/m^2/day)**
D1-N	105
D1-S	**Note 1**
D1-E	14
D1-W	7
D2-N	261
D2-S	240
D2-E	271
D2-W	182
D3-N	441
D3-S	338
D3-E	682
D3-W	474
D4-N	275
D4-S	184
D4-E	210
D4-W	229

COMMENT

As can be seen in Tables 4.1, the dust deposition level of 782 mg/m^2/day at the D3 dust monitoring location exceeds the licence limit of 350mg/m^2/day as per Schedule B5 of Waste Licence Register No. W0131-02. D3 is located at the entrance to the AES Site. Looking at the directional dust gauges, the majority of dust came from the east. To the east is the main access road to the AES and Kilsaran sites, therefore elevated dust the area would have resulted from traffic on the main access road to both Kilsaran and AES sites.

The remainder dust monitoring locations are below the licence limit of 350mg/m^2/day.

Note 1: The directional dust gauge at the D1-S monitoring location was not exposed as it faces directly into a cliff at the back of the AES site and results would not be representative of activities in that area.

APPENDIX 1

Map of Monitoring Locations

BORD NA MÓNA

BORD NA MÓNA ENVIRONMENTAL LIMITED

DUST DEPOSITION MONITORING AT THE ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD. SITE AT PROUDSTOWN RD, NAVAN, CO. MEATH IN ACCORDANCE WITH THE REQUIREMENTS OF THEIR WASTE LICENCE, REGISTER NO. W0131-02

For the Attention of:
Ms. Linda Cahill
Environmental Officer
Advanced Environmental Solutions (Ireland) Ltd.
Unit 1 Monread Commercial Park
Naas
Co. Kildare

Prepared by:
Mr. Peter Coogan
Monitoring Team Leader

Reviewed by:
Mr. Ronan Connolly
Environmental Scientist

Report No:	ECS3381-Dust
Monitoring period:	July/ August 2009
Reporting date:	September 2009

Executive Summary / Certification of Results

Bord na Móna Technical Services was commissioned by Advanced Environmental Solutions Ltd. (AES) to conduct dust deposition and directional dust monitoring at selected locations within the facility.

This sampling was conducted in accordance with the company's Waste Licence (Register No. W0131-02) sampling programme. Eleven directional gauges and three deposition gauges were exposed for a 32 day period between the 23rd July 2009 and the 24th August 2009. The dust samples were returned to the laboratory for subsequent analysis.

The directional dust gauge at the D3-N monitoring location went missing during this monitoring period.

Depositional and directional dust monitoring was not conducted at the D1 dust monitoring location as the dust polls were taken off-site for maintenance and repair.

The Waste Licence limit for dust deposition is given as 350mg/m^2/day as per schedule B5 of the Waste Licence.

This report is certified as accurate and representative of the sampling and associated analysis carried out.

Respectively Submitted,

Peter Coogan

Mr. Peter Coogan
Monitoring Team Leader

Ronan Connolly

Mr. Ronan Connolly
Environmental Scientist

TABLE OF CONTENTS

1.0 INTRODUCTION

In compliance with the requirements of their Waste Licence, Register No. W0131-02 (Schedule C.6) AES are required to monitor dust deposition and dust direction from their facility at Proudstown, Navan, Co. Meath three times per year. Dust deposition is monitored by the German standard method VDI 2119 (Bergerhoff). Directional dust is monitored in accordance with British Standard BS 1747 using directional dust gauges.

Bord na Móna Technical Services was commissioned to perform the sampling and analysis. The site was visited by a Bord na Móna Environmental Scientist on the 23rd of July 2009 to install dust gauges for dust deposition and directional dust monitoring. The dust gauges were exposed for a 32 day period prior to being collected on the 24th of August 2009. All dust samples were returned to the laboratory for analysis.

This report details the sampling and analytical methodologies adopted.

2.0 METHODOLOGY

2.1 Dust Monitoring Locations

Dust deposition and dust direction samples were taken at four locations within the site boundary. Table 2.1 below describes the sampling locations which are accurately marked on the environmental monitoring map locations attached in Appendix 1.

TABLE 2.1: LOCATION OF DUST MONITORING POSITIONS

Sample Name	Grid Co-ordinates	Location
D1	286877E, 269773N	*Back of site (Southeast)*
D2	286777E, 269892N	*Front of Site (Adjacent to road) (Northwest)*
D3	286814E, 269889N	*Front of Site (Adjacent to road) (North)*
D4	286882E, 269871N	*Located in Car Park (Northeast)*

2.2 Sampling

2.2.1 Dust Deposition

The Bergerhoff Dust Deposition Gauges used for this sampling survey consist of a plastic collecting vessel and a stand with a protective cage. Each vessel was placed in the metal basket which was positioned at a height of between 1.5 and 2 meters above ground level according to the German Standard Method VDI 2119 (Measurement of Dustfall, Determination of Dustfall using Bergerhoff Instrument (Standard Method) German Engineering Institute).

Prior to sampling, the collecting vessels were carefully cleaned with laboratory detergent, rinsed with deionised water and allowed to dry. Following exposure, the sample bottles were securely capped and returned to the laboratory for analysis.

2.2.2 Dust Direction

Dust direction monitoring was conducted using directional dust gauges conforming to the British Standard BS 1747; Part 5. Each gauge measures the lateral flux through four vertical slots to collectors arranged on a vertical support. Each complete directional dust gauge assembly is comprised of:

- One vertical supporting post set at 150mm above ground level,
- Four collecting heads set at 90° to each other, and
- Four collecting bottles attached to the collecting heads.

Prior to sampling, the collecting vessels were carefully cleaned with laboratory detergent, rinsed with deionised water and allowed to dry. Sampling involved placing the labelled containers in the protective cages. Following exposure, the sample bottles were securely capped and returned to the laboratory for analysis.

2.3 Analysis

All samples returned to the laboratory were stored at 2-8°C. Subsequent analysis of all samples was carried out gravimetrically for dust and strictly followed the standard VDI 2119. The results are expressed in $mg/m^2/day$.

3.0 COMMITMENT TO QUALITY

3.1 INAB Accreditation

Bord na Móna Technical Services analytical laboratories is accredited to ISO 17025 by the National Accreditation Board (INAB). ISO 17025 accreditation ensures that the laboratory operates a quality system with technically competent staff. The laboratory has accreditation since 1997 and it is the policy of the laboratory to achieve and maintain a high standard of quality consistent with client's requirements in all aspects of the work carried out within the laboratory.

3.2 Interlaboratory Proficiency Schemes

To ensure the accuracy of the analytical testing the laboratory participates in several external proficiency schemes. The ongoing competence of the laboratory and its staff is assessed by participation in various inter-laboratory proficiency testing schemes, such as LGC Aquacheck scheme and the EPA Intercalibration programme organised for environmental laboratories throughout Ireland. Bord na Móna Technical & Laboratory Services Analytical Laboratory is listed on the EPA's register of Quality Controlled Laboratories

3.3 Control Chain of Custody

As part of the Quality System in place at Bord na Móna Technical Services., measures are taken to ensure controlled chain of custody. An outline of the chain of custody is given below.

BORD NA MÓNA

CONTROLLED CHAIN OF CUSTODY

SITE		TRANSPORT		LABORATORY
Sampling and packaging of all samples were carried out by Bord na Móna Technical Team:	Transport Document Form	Transport to laboratory by Bord na Móna Technical Team.	Sample Reception Form	Receiving of samples at Bord na Móna Environmental Laboratory complex: Laboratory Manager (Secure laboratory complex access to authorised personnel only)
Mr. Peter Coogan	→		→	↓
				Storage of all samples for 1 month period after report issue.
				↓
				Supervised Disposal

4.0 RESULTS

The results of the dust deposition and direction survey which was carried out from the 23rd of July to the 24th of August 2009 at AES Ltd. Navan facility are presented in Table 4.1 and Table 4.2 below.

The Waste Licence limit for dust deposition is given as 350mg/m^2/day as per Schedule B5 of the Waste Licence.

TABLE 4.1: RESULTS OF DUST DEPOSITION MONITORING

Sampling Location Number	Deposition Rate (mg/m^2/day)	***Waste Licence Dust Deposition Limit (mg/m^2/day)***
D1	Note 1	***350***
D2	**1,278**	***350***
D3	**1,221**	***350***
D4	137	***350***

Note 1: Dust gauge was in repair during this monitoring period

TABLE 4.2: RESULTS OF DIRECTIONAL DUST MONITORING

Sample Name	**Deposition Rate (mg/m^2/day)**
D1-N	**Note 1**
D1-S	**Note 1**
D1-E	**Note 1**
D1-W	**Note 1**
D2-N	149
D2-S	186
D2-E	104
D2-W	118
D3-N	**Note 1**
D3-S	374
D3-E	394
D3-W	355
D4-N	143
D4-S	192
D4-E	82
D4-W	69

COMMENT

As can be seen in Tables 4.1, the dust deposition level of 1,278 mg/m^2/day at the D2 dust monitoring location exceeded the licence limit of 350mg/m^2/day as per Schedule B5 of Waste Licence Register No. W0131-02. D2 is located on the northern boundary of the AES facility, adjacent to the Kilsaran site entrance. As can be seen from table 4.2, the results of the directional dust gauges show that the majority of dust originated from the south (D2-S 186mg/m^2/day) (AES facility) and from the north (D2-N 149mg/m^2/day) (kilsaran facility, traffic on main access road to Kilsaran).

Dust levels at the D3 monitoring location (1,221mg/m^2/day) exceeded the licence limit of 350mg/m^2/day. D3 is located on the northern boundary beside the entrance to the AES facility. Results of the directional dust from the south (D3-S 374mg/m^2/day), east (D3-E 394mg/m^2/day) and west (D3-W 355mg/m^2/day) are similar, which would suggest that both the Kilsaran and AES activities are contributing to dust in that area. Dust arising from trucks travelling on the main access road to both facilities would have contributed to high dust levels in that area.

Dust monitoring was conducted during the July and August summer months, leading to higher ambient dust levels.

The results of dust deposition at the D4 dust monitoring location was 137mg/m^2/day and below the licence limit of 350mg/m^2/day.

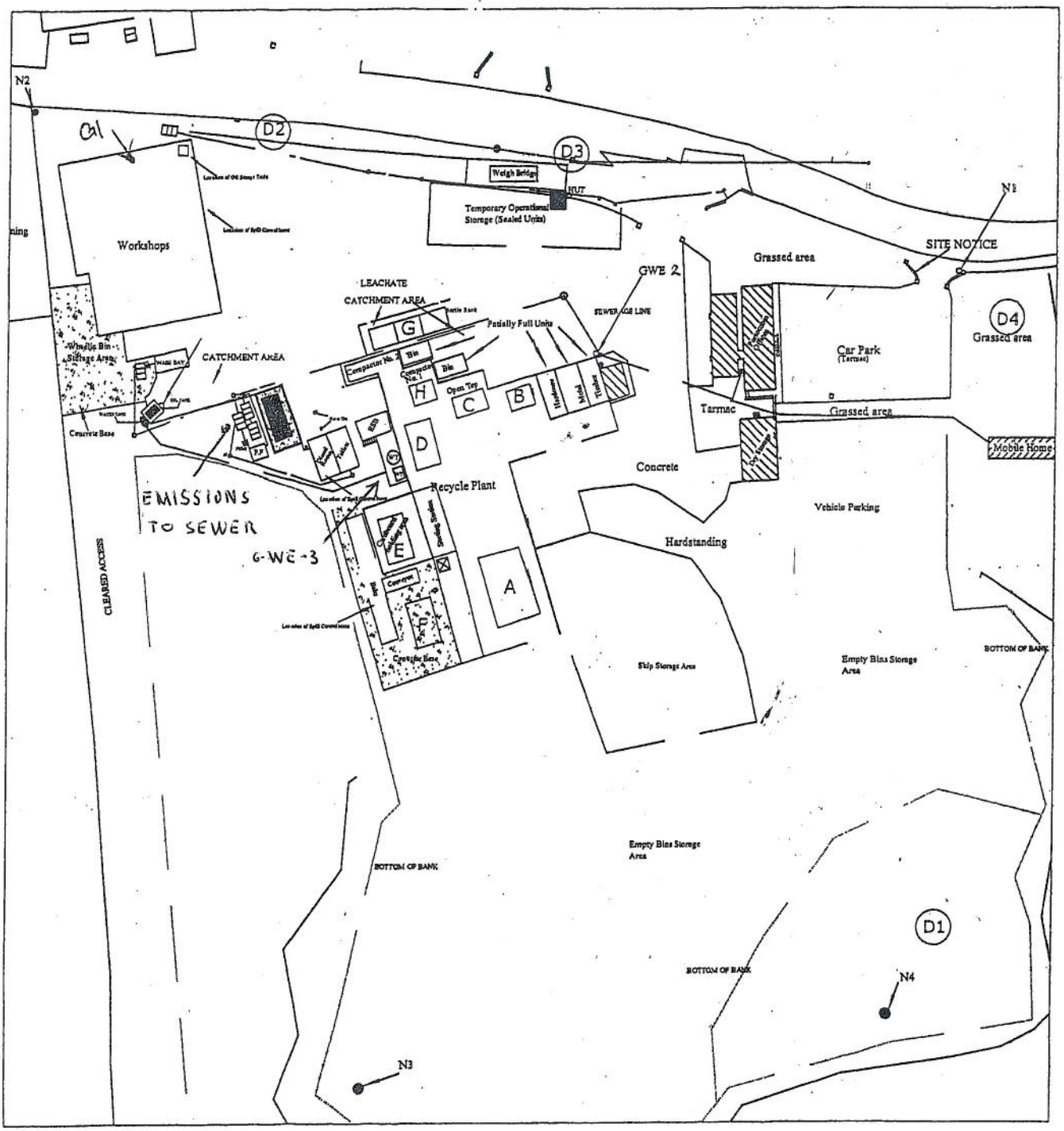
Note 1:

The directional dust gauge at the D3-N monitoring location went missing during this monitoring period.

Depositional and directional dust monitoring was not conducted at the D1 dust monitoring location, as the dust polls were taken off-site for maintenance and repair.

APPENDIX 1

Map of Monitoring Locations



Monitoring Locations

Dust (D1, D2, D3, and D4)
Noise (N1, N2, N3, N4, N5, and N6)
Emissions to Groundwater
Groundwater (GW1)

BORD NA MÓNA
ENVIRONMENTAL DIVISION
NEWBRIDGE, CO. KILDARE

ENVIRONMENTAL ASSESSMENT OF THE QUALITY OF FOUL AND STORM WATER AT THE ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD. SITE AT PROUDSTOWN RD, NAVAN, CO. MEATH IN ACCORDANCE WITH WASTE LICENCE REGISTER NO. W0131-02

For the Attention of:
Ms. Linda Cahill
Environmental Officer
Advanced Environmental Solutions (Ireland) Ltd.
Unit 1 Monread Commercial Park
Monread Road
Naas
Co. Kildare

Prepared by:
Mr. Peter Coogan
Monitoring Team Leader

Reviewed by:
Mr. Ronan Connolly
Environmental Scientist

REPORT NO: ECS3227
MONITORING DATE: Quarter 1 January 2009
DATE: February 2009

Executive Summary

In accordance with the requirements of the company's Waste Licence (Register No. W0131-02), Advanced Environmental Solutions (AES) Ltd., are required to conduct monitoring of Storm Water and Emissions to Sewer from the Navan facility on a quarterly basis. Bord na Móna Technical Services were commissioned to perform the sampling and analysis, which was undertaken on the 14th of January 2009.

Emission limits for trade effluent and storm water are not specified in the Waste Licence (Register No. W0131-02).

It should also be noted that this effluent is sent by tanker to the local authority wastewater treatment plant.

This report is certified as accurate and representative of the sampling and associated analysis carried out.

Respectively Submitted,

Mr. Peter Coogan	Mr. Ronan Connolly
Monitoring Team Leader	Environmental Scientist

CONTENTS

1.0 INTRODUCTION

As part of the requirements of the company's Waste Licence (Register No. W0131-02), AES are required to conduct monitoring of the Storm Water and Emissions to Sewer on a quarterly basis. Bord na Móna Technical Services were commissioned to perform the sampling and analysis, which was undertaken on the 14th of January 2009.

This report presents details of the sampling and analysis methodologies used and a discussion of the results obtained.

2.0 METHODOLOGY

2.1 Sampling Locations

Sampling locations are described in Table 2.1 below and marked on the map contained in Appendix 1.

TABLE 2.1: LOCATION OF SURFACE WATER SAMPLING STATIONS	
Sample Point	**Location**
GWE-2 (Storm Water)	North West corner of site
GWE-3 (Storm Water)	East of the site
Emissions to Sewer	Trade Effluent Storage tank beside fuel tank

2.2 Representative Sampling

Emissions to Sewer
Grab samples of surface water were extracted in accordance with standard procedures.

Emissions to Storm Water
Storm water was collected during rainfall from the gully on the roof of the main shed.

All samples were returned to the laboratory and stored at 2-8°C.

2.3 Analysis

Analysis of samples was conducted in accordance with recognised standard methods as detailed in Table 2.2 below.

TABLE 2.2: CHEMICAL ANALYSIS OF EMISSIONS TO SEWER SAMPLES

Parameter	Limit of Detection/Range	Method
pH (pH units)	-	G/05
BOD (mg/l)	<2	G/04 Based on APHA, 2005, 21st Edition, Method 5210-B
COD (mg/l)	<10	G/03 Based on APHA, 2005, 21st Edition, Method 5220D
Conductivity (µS/cm)	-	G/06 Based on APHA, 2005, 21st Edition, Method 2510 B
Total Suspended Solids (mg/l)	<5	G/19 Based on APHA, 2005, 21st Edition, Method 2540D
Total Nitrogen (mg/l)	<1	Based on ENV 12260 1996
Ammonia-N (mg/l)	<0.02	G/67 Based on APHA, 2005, 21st Edition, Method 4500-NH3
Total Organic Carbon (mg/l)	5-500	TOC Analyser
Sulphate (mg/l)	0.5-50	G/39 Based on APHA, 2005, 21st Edition, Method 4110B
Copper (mg/l)	<0.03	G/57 Based on EPA Method 200.8
Zinc (mg/l)	<0.02	G/57 Based on EPA Method 200.8
DRO's (µg/l)	<10	GC-FID
Oils, fats & greases (mg/l)	<1	G/32 Based on APHA, 2005, 21st Edition, Method 5520B
MBAS (mg/l)	<0.05	G/24 Based on APHA, 2005, 21st Edition, Method 5540C

G/ -INAB Accredited Method, BnM Environmental and Analytical Services SOP Manual.
APHA: American Public Health Association, Standard Methods for the Examination of Waters and Wastewaters, 21st Edition, 2005.

3.0 COMMITMENT TO QUALITY

3.1 INAB Accreditation

Bord na Móna Technical Services analytical laboratories is accredited to ISO 17025 by the National Accreditation Board (INAB). ISO 17025 accreditation ensures that the laboratory operates a quality system with technically competent staff. The laboratory has accreditation since 1997 and it is the policy of the laboratory to achieve and maintain a high standard of quality consistent with client's requirements in all aspects of the work carried out within the laboratory.

3.2 Interlaboratory Proficiency Schemes

To ensure the accuracy of the analytical testing the laboratory participates in several external proficiency schemes. The ongoing competence of the laboratory and its staff is assessed by participation in various inter-laboratory proficiency testing schemes, such as LGC Aquacheck scheme and the EPA Intercalibration programme organised for environmental laboratories throughout Ireland. Bord na Móna Environmental Consultancy & Laboratory Services Analytical Laboratory is listed on the EPA's register of Quality Controlled Laboratories

3.3 Control Chain of Custody

As part of the Quality System in place in Bord na Móna, Technical Services, measures are taken to ensure controlled chain of custody. An outline of the chain of custody is given below.

BORD NA MÓNA

BORD NA MÓNA ENVIRONMENTAL LIMITED

CONTROLLED CHAIN OF CUSTODY

SITE	TRANSPORT	LABORATORY
Sampling and packaging of all samples were carried out by Bord na Móna Technical Team:	Transport Document Form	Transport to laboratory by Bord na Móna Technical Team.
Mr. Peter Coogan	→	→

LABORATORY
Sample Reception Form
Receiving of samples at Bord na Móna Environmental Laboratory complex by: Laboratory Manager (Secure laboratory complex access to authorised personnel only)
↓
Storage of all samples for 1 month period after report issue.
↓
Supervised Disposal

4.0 RESULTS

The results of the on-site investigations carried out by Bord na Móna Technical Services are presented in Table 4.1 below.

4.1 Emissions to Sewer Results

TABLE 4.1: RESULTS OF CHEMICAL ANALYSIS OF THE EMISSIONS TO SEWER SAMPLE

Parameter	Sewer Sample
pH (pH units)	7.7
Total Organic Carbon (mg/l)	108
BOD (mg/l)	178
COD (mg/l)	481
Total Suspended Solids (mg/l)	131
Sulphate (mg/l)	44.80
**Copper (µg/l)	22
**Zinc (µg/l)	223
Oils/Fats/Greases (mg/l)	16
**DRO (µg/l)	606
**Mineral Oil (µg/l)	<10
Detergents (MBAS) (mg/l)	0.58

** Subcontracted Test

It should be noted that this effluent is sent by tanker to the local authority wastewater treatment plant.

Emission limits for leachate are not specified in the Waste Licence (Register No. W0131-02).

4.2 Emissions to Storm Water Results

TABLE 4.2: RESULTS OF CHEMICAL ANALYSIS OF THE EMISSIONS TO STORM WATER

Parameter	GWE-2	GWE-3
pH (pH units)	7.5	7.1
Conductivity(µS/cm)	14	26
BOD (mg/l)	<2	<2
COD (mg/l)	38	39
Total Suspended Solids (mg/l)	<5	<5
Total Nitrogen (mg/l)	<1	<1
Ammonia (mg/l)	0.18	0.33

APPENDIX 1

Map of Monitoring Locations

ENVIRONMENTAL ASSESSMENT OF THE QUALITY OF FOUL AND STORM WATER AT THE ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD. SITE AT PROUDSTOWN RD, NAVAN, CO. MEATH IN ACCORDANCE WITH WASTE LICENCE REGISTER NO. W0131-02

For the Attention of:
Ms. Linda Cahill
Environmental Officer
Advanced Environmental Solutions (Ireland) Ltd.
Unit 1 Monread Commercial Park
Monread Road
Naas
Co. Kildare

Prepared by:
Mr. Peter Coogan
Monitoring Team Leader

Reviewed by:
Mr. Ronan Connolly
Environmental Scientist

REPORT NO: ECS3307
MONITORING DATE: Quarter 2 April 2009
DATE: June 2009

Executive Summary

In accordance with the requirements of the company's Waste Licence (Register No. W0131-02), Advanced Environmental Solutions (AES) Ltd., are required to conduct monitoring of Storm Water and Emissions to Sewer from the Navan facility on a quarterly basis. Bord na Móna Technical Services were commissioned to perform the sampling and analysis, which was undertaken on the 23rd of April 2009.

Emission limits for trade effluent and storm water are not specified in the Waste Licence (Register No. W0131-02).

It should also be noted that this effluent is sent by tanker to the local authority wastewater treatment plant.

This report is certified as accurate and representative of the sampling and associated analysis carried out.

Respectively Submitted,

Mr. Peter Coogan	Mr. Ronan Connolly
Monitoring Team Leader	Environmental Scientist

CONTENTS

1.0 INTRODUCTION

As part of the requirements of the company's Waste Licence (Register No. W0131-02), AES are required to conduct monitoring of the Storm Water and Emissions to Sewer on a quarterly basis. Bord na Móna Technical Services were commissioned to perform the sampling and analysis, which was undertaken on the 23rd of April 2009.

This report presents details of the sampling and analysis methodologies used and a discussion of the results obtained.

2.0 METHODOLOGY

2.1 Sampling Locations

Sampling locations are described in Table 2.1 below and marked on the map contained in Appendix 1.

TABLE 2.1: LOCATION OF SURFACE WATER SAMPLING STATIONS	
Sample Point	**Location**
GWE-2 (Storm Water)	North West corner of site
GWE-3 (Storm Water)	East of the site
Emissions to Sewer	Trade Effluent Storage tank beside fuel tank

2.2 Representative Sampling

Emissions to Sewer
Grab samples of surface water were extracted in accordance with standard procedures.

Emissions to Storm Water
Storm water was collected during rainfall from the gully on the roof of the main shed.

All samples were returned to the laboratory and stored at 2-8°C.

2.3 Analysis

Analysis of samples was conducted in accordance with recognised standard methods as detailed in Table 2.2 below.

TABLE 2.2: CHEMICAL ANALYSIS OF EMISSIONS TO SEWER SAMPLES

Parameter	Limit of Detection/Range	Method
pH (pH units)	-	G/05
BOD (mg/l)	<2	G/04 Based on APHA, 2005, 21st Edition, Method 5210-B
COD (mg/l)	<10	G/03 Based on APHA, 2005, 21st Edition, Method 5220D
Conductivity (µS/cm)	-	G/06 Based on APHA, 2005, 21st Edition, Method 2510 B
Total Suspended Solids (mg/l)	<5	G/19 Based on APHA, 2005, 21st Edition, Method 2540D
Total Nitrogen (mg/l)	<1	Based on ENV 12260 1996
Ammonia-N (mg/l)	<0.02	G/67 Based on APHA, 2005, 21st Edition, Method 4500-NH3
Total Organic Carbon (mg/l)	5-500	TOC Analyser
Sulphate (mg/l)	0.5-50	G/39 Based on APHA, 2005, 21st Edition, Method 4110B
Copper (mg/l)	<0.03	G/57 Based on EPA Method 200.8
Zinc (mg/l)	<0.02	G/57 Based on EPA Method 200.8
DRO's (µg/l)	<10	GC-FID
Oils, fats & greases (mg/l)	<1	G/32 Based on APHA, 2005, 21st Edition, Method 5520B
MBAS (mg/l)	<0.05	G/24 Based on APHA, 2005, 21st Edition, Method 5540C

G/ -INAB Accredited Method, BnM Environmental and Analytical Services SOP Manual.
APHA: American Public Health Association, Standard Methods for the Examination of Waters and Wastewaters, 21st Edition, 2005.

3.0 COMMITMENT TO QUALITY

3.1 INAB Accreditation

Bord na Móna Technical Services analytical laboratories is accredited to ISO 17025 by the National Accreditation Board (INAB). ISO 17025 accreditation ensures that the laboratory operates a quality system with technically competent staff. The laboratory has accreditation since 1997 and it is the policy of the laboratory to achieve and maintain a high standard of quality consistent with client's requirements in all aspects of the work carried out within the laboratory.

3.2 Interlaboratory Proficiency Schemes

To ensure the accuracy of the analytical testing the laboratory participates in several external proficiency schemes. The ongoing competence of the laboratory and its staff is assessed by participation in various inter-laboratory proficiency testing schemes, such as LGC Aquacheck scheme and the EPA Intercalibration programme organised for environmental laboratories throughout Ireland. Bord na Móna Environmental Consultancy & Laboratory Services Analytical Laboratory is listed on the EPA's register of Quality Controlled Laboratories

3.3 Control Chain of Custody

As part of the Quality System in place in Bord na Móna, Technical Services, measures are taken to ensure controlled chain of custody. An outline of the chain of custody is given below.

BORD NA MÓNA

CONTROLLED CHAIN OF CUSTODY

SITE	TRANSPORT	LABORATORY
Sampling and packaging of all samples were carried out by Bord na Móna Technical Team:	Transport Document Form	Transport to laboratory by Bord na Móna Technical Team.
Mr. Peter Coogan	→	→

LABORATORY
Sample Reception Form
→

LABORATORY
Receiving of samples at Bord na Móna Environmental Laboratory complex by: Laboratory Manager (Secure laboratory complex access to authorised personnel only)
↓
Storage of all samples for 1 month period after report issue.
↓
Supervised Disposal

4.0 RESULTS

The results of the on-site investigations carried out by Bord na Móna Technical Services are presented in Table 4.1 below.

4.1 Emissions to Sewer Results

TABLE 4.1: RESULTS OF CHEMICAL ANALYSIS OF THE EMISSIONS TO SEWER SAMPLE

Parameter	Sewer Sample
pH (pH units)	7.5
Total Organic Carbon (mg/l)	213
BOD (mg/l)	475
COD (mg/l)	1,020
Total Suspended Solids (mg/l)	210
Sulphate (mg/l)	6.0
**Copper (µg/l)	<2
**Zinc (µg/l)	564
Oils/Fats/Greases (mg/l)	53
**DRO (µg/l)	68,900
**Mineral Oil (µg/l)	<10
Detergents (MBAS) (mg/l)	2.60

** Subcontracted Test

It should be noted that this effluent is sent by tanker to the local authority wastewater treatment plant.

Emission limits for leachate are not specified in the Waste Licence (Register No. W0131-02).

4.2 Emissions to Storm Water Results

TABLE 4.2: RESULTS OF CHEMICAL ANALYSIS OF THE EMISSIONS TO STORM WATER

Parameter	GWE-2	GWE-3
pH (pH units)	7.6	-
Conductivity(µS/cm)	161	-
BOD (mg/l)	18	-
COD (mg/l)	78	-
Total Suspended Solids (mg/l)	<5	-
Total Nitrogen (mg/l)	5	-
Ammonia (mg/l)	1.49	-

Results for GWE-3 not available as no sample was collected due to minimal rain fall during monitoring

APPENDIX 1

Map of Monitoring Locations

BORD NA MÓNA

BORD NA MÓNA ENVIRONMENTAL LIMITED

ENVIRONMENTAL ASSESSMENT OF THE QUALITY OF FOUL AND GROUND WATERS AT THE ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD. SITE AT PROUDSTOWN RD, NAVAN, CO. MEATH IN ACCORDANCE WITH WASTE LICENCE REGISTER NO. W0131-02

For the Attention of:
Ms. Linda Cahill
Environmental Officer
Advanced Environmental Solutions (Ireland) Ltd.
Unit 1 Monread Commercial Park
Monread Road
Naas
Co. Kildare

Prepared by:
Mr. Peter Coogan
Monitoring Team Leader

Reviewed by:
Mr. Ronan Connolly
Environmental Scientist

REPORT NO: ECS3381
MONITORING DATE: Biannual 2 and Quarter 3 July 2009
DATE: September 2009

Executive Summary

In accordance with the requirements of the company's Waste Licence (Register No. W0131-02), Advanced Environmental Solutions (AES) Ltd., are required to conduct monitoring of the Groundwater underlying the Navan facility on a biannual basis. Additionally, monitoring of their Emissions to Sewers and Storm water from the Navan facility is required to be carried out on a quarterly basis.

Bord na Móna Technical Services were commissioned to perform the sampling and analysis, which was undertaken on the 17th of July 2009.

Emission limits for trade effluent and storm water are not specified in the Waste Licence (Register No. W0131-02).

It should also be noted that this effluent is sent by tanker to the local authority wastewater treatment plant.

This report is certified as accurate and representative of the sampling and associated analysis carried out.

Respectively Submitted,

Mr. Peter Coogan
Monitoring Team Leader

Mr. Ronan Connolly
Environmental Scientist

CONTENTS

1.0 INTRODUCTION

As part of the requirements of the company's Waste Licence (Register No. W0131-02), AES are required to conduct monitoring of the Groundwater underlying the Navan facility on a biannual basis, and monitoring of their Emissions to Sewer and Storm water on a quarterly basis. Bord na Móna Technical Services were commissioned to perform the sampling and analysis, which was undertaken on the 17th of July 2009.

This report presents details of the sampling, analytical methodologies used, and a discussion of the results obtained.

2.0 METHODOLOGY

2.1 Sampling Locations

Sampling locations are described in Table 2.1 below and marked on the map contained in Appendix 1.

TABLE 2.1: LOCATION OF SURFACE AND GROUND WATER SAMPLING STATIONS

Sample Point	Location
GW-1 (Groundwater)	(Kilsaran well) Tap on left hand wall of workshop in Kilsaran facility
Emissions to Sewer	Trade Effluent Storage tank beside fuel tank

2.2 Representative Sampling

Emissions to Sewer

Grab samples of surface water were extracted in accordance with standard procedures.

Groundwater

Groundwater in the well casing and in close proximity to the well is not considered representative of the general groundwater at a given location. In order to ensure that the groundwater sample extracted from the discharge point was representative of the water held in the well, and not water held stagnant in the pipeline, it was necessary to evacuate the pipeline prior to sampling.

Samples from the Kilsaran well were collected from the nearest sampling point to the well head, which is a tap in a shed within the Kilsaran facility, linked directly to the well. Prior to sampling, approximately 300 litres of water (where feasible) was allowed to run to ensure that all stagnant water from the pipeline was removed and that a representative sample was being collected.

All samples were returned to the laboratory and stored at 2-8°C.

2.3 Analysis

Analysis of samples was conducted in accordance with recognised standard methods as detailed in Table 2.2 below.

TABLE 2.2: CHEMICAL ANALYSIS OF SAMPLES

Parameter	Limit of Detection/Range	Method
pH (pH units)	-	G/05 Based on APHA, 2005, 21st Edition, Method 4500 H+B
Conductivity (S/cm)	-	G/06 Based on APHA, 2005, 21st Edition, Method 2510 B
BOD (mg/l)	<2	G/04 Based on APHA, 2005, 21st Edition, Method 5210-B
COD (mg/l)	<10	G/03 Based on APHA, 2005, 21st Edition, Method 5220D
Total Suspended Solids (mg/l)	<5	G19 Based on APHA, 2005, 21st Edition, Method 2540D
Ammonia-N (mg/l)	<0.02	G/67 Based on APHA, 2005, 21st Edition, Method 4500-NH3
Total Nitrogen (mg/l)	<1	Based on ENV 12260 1996
Total Organic Carbon (mg/l)	5-500	TOC Analyser
Chloride (mg/l)	0.5-50	Ion Chromatography
Sulphate (mg/l)	0.5-50	
Nitrate-N (mg/l)	<0.04-	
Copper (mg/l)	<0.03	G/57 Based on EPA Method 200.8
Zinc (mg/l)	<0.02	G/57 Based on EPA Method 200.8
Volatile Organics* (g/l)	<10	USEPA Method 524.2 Purge and Trap, GC-MS
Non Purgeable Organics (mg/l)	<0.5	GC-FID
DROs (µg/l)	<10	GC-FID
Oils, fats & greases (mg/l)	<1	G/32 Based on APHA, 2005, 21st Edition, Method 5520B
MBAS (mg/l)	<0.05	G/24 Based on APHA, 2005, 21st Edition, Method 5540C
Total Coliforms (MPN/100ml)	<1	Based on IDEXX's patented Defined Substrate Technology
Faecal coliforms (MPN/100ml)	<1	Based on IDEXX's patented Defined Substrate Technology

G/ -INAB Accredited Method, BnM Environmental and Analytical Services SOP Manual.
APHA: American Public Health Association, Standard Methods for the Examination of Waters and Wastewaters, 21st Edition, 2005.

3.0 COMMITMENT TO QUALITY

3.1 INAB Accreditation

Bord na Móna Technical Services analytical laboratories is accredited to ISO 17025 by the National Accreditation Board (INAB). ISO 17025 accreditation ensures that the laboratory operates a quality system with technically competent staff. The laboratory has accreditation since 1997 and it is the policy of the laboratory to achieve and maintain a high standard of quality consistent with client's requirements in all aspects of the work carried out within the laboratory.

3.2 Interlaboratory Proficiency Schemes

To ensure the accuracy of the analytical testing the laboratory participates in several external proficiency schemes. The ongoing competence of the laboratory and its staff is assessed by participation in various inter-laboratory proficiency testing schemes, such as LGC Aquacheck scheme and the EPA Intercalibration programme organised for environmental laboratories throughout Ireland. Bord na Móna Technical & Laboratory Services Analytical Laboratory is listed on the EPA's register of Quality Controlled Laboratories

3.3 Control Chain of Custody

As part of the Quality System in place in Bord na Móna, Technical Services, measures are taken to ensure controlled chain of custody. An outline of the chain of custody is given below.

BORD NA MÓNA

CONTROLLED CHAIN OF CUSTODY

SITE		TRANSPORT		LABORATORY
Sampling and packaging of all samples were carried out by Bord na Móna Technical Team:	Transport Document Form	Transport to laboratory by Bord na Móna Technical Team.	Sample Reception Form	Receiving of samples at Bord na Móna Environmental Laboratory complex by: Laboratory Manager (Secure laboratory complex access to authorised personnel only)
Mr. Peter Coogan	→		→	↓
				Storage of all samples for 1 month period after report issue.
				↓
				Supervised Disposal

4.0 RESULTS

The results of the on-site investigations carried out by Bord na Móna Technical Services are presented in Table 4.1 below.

4.1 Groundwater Results

TABLE 4.1: RESULTS OF CHEMICAL ANALYSIS OF THE GROUNDWATER SAMPLE	
Parameter	**Concentration**
	Kilsaran
pH (pH units)	7.7
Conductivity @ 25°C (□S/cm)	805
COD (mg/l)	<10
Chloride (mg/l)	25.97
Fluoride (mg/l)	<0.10
Ammonia-N (mg/l)	<0.02
*Total Nitrogen mg/l	<1.00
Nitrate as N(mg/l)	0.22
**Total Coliforms (MPN/100ml)	37
**Faecal Coliforms (MPN/100ml)	0
*VOC's USEPA 524.2 (µg/l)	<10

* Non INAB accredited test
** Sub-Contracted Test

4.2 Emissions to Sewer Results

TABLE 4.2: RESULTS OF CHEMICAL ANALYSIS OF THE EMISSIONS TO SEWER SAMPLE	
Parameter	**Sewer Sample**
pH (pH units)	5.5
Total Organic Carbon (mg/l)	1,251
BOD (mg/l)	2,275
COD (mg/l)	3,725
Total Suspended Solids (mg/l)	638
Sulphate (mg/l)	425.64
*Copper (µg/l)	35
*Zinc (µg/l)	674
*Oils/Fats/Greases (mg/l)	38
**DRO (µg/l)	41,000
**Mineral Oil (µg/l)	39,900
Detergents (MBAS) (mg/l)	0.34

* Non INAB accredited test
** Subcontracted Test

It should be noted that this effluent is sent by tanker to the local authority wastewater treatment plant.

Emission limits for leachate are not specified in the Waste Licence (Register No. W0131-02).

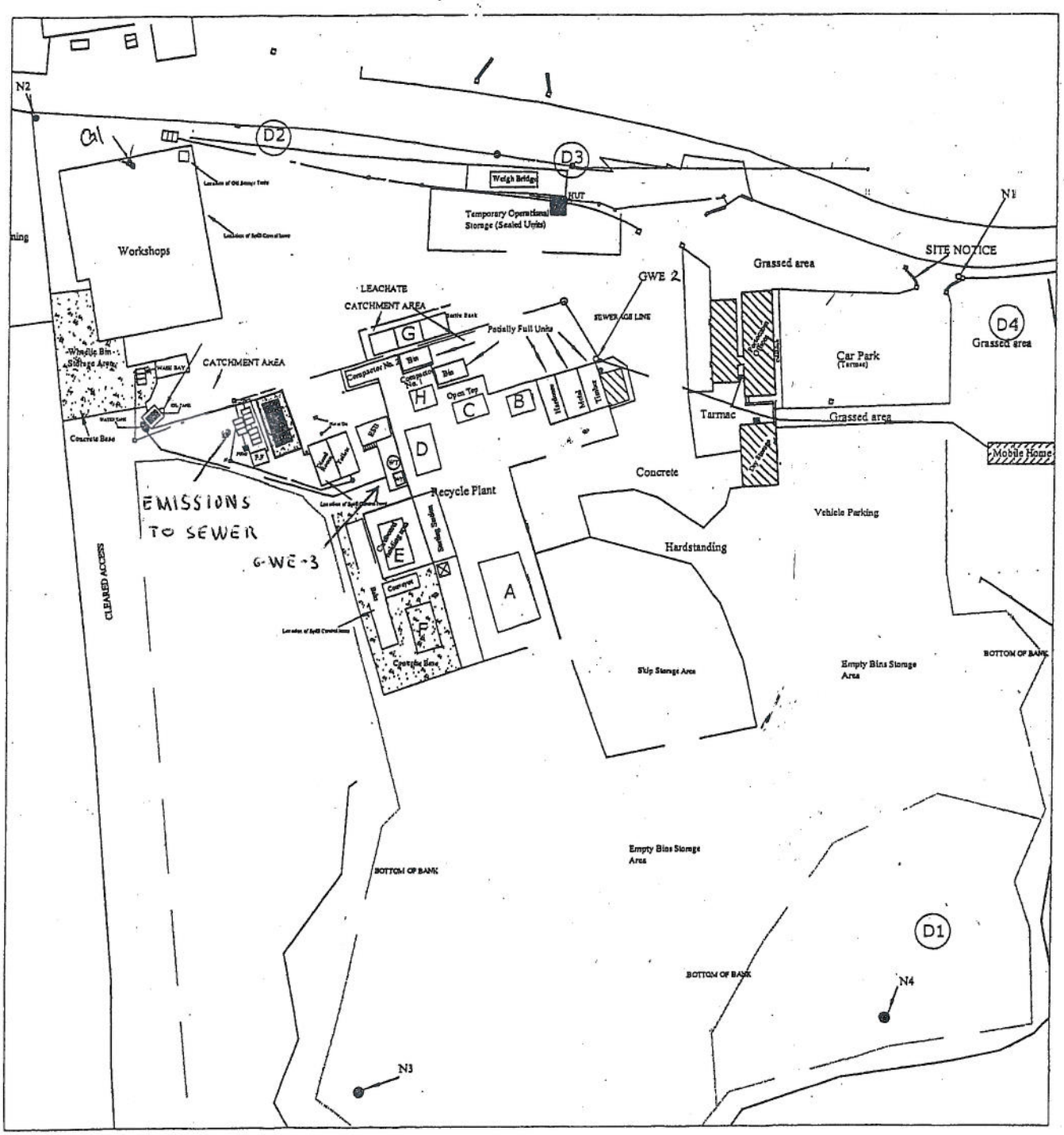
The ground water sample was extracted from a tap located in a shed next to the office in the Kilsaran facility. The tap water is sourced from a well located on the Kilsaran site.

4.3 Emissions to Storm Water Results

Results for GWE-2 and GWE-3 not available as no sample was collected due to minimal rain fall during monitoring.

APPENDIX 1

Map of Monitoring Locations



Monitoring Locations

Dust (D1, D2, D3, and D4)
Noise (N1, N2, N3, N4, N5, and N6)
Emissions to Groundwater
Groundwater (GW1)

BORD NA MÓNA
ENVIRONMENTAL DIVISION
NEWBRIDGE, CO. KILDARE

BORD NA MÓNA

BORD NA MÓNA ENVIRONMENTAL LIMITED

ENVIRONMENTAL ASSESSMENT OF THE QUALITY OF FOUL AND STORM WATERS AT THE ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD. SITE AT PROUDSTOWN RD, NAVAN, CO. MEATH IN ACCORDANCE WITH WASTE LICENCE REGISTER NO. W0131-02

For the Attention of:
Ms. Linda Cahill
Environmental Officer
Advanced Environmental Solutions (Ireland) Ltd.
Unit 1 Monread Commercial Park
Monread Road
Naas
Co. Kildare

Prepared by:
Mr. Eamonn Lee
Environmental Scientist

Reviewed by:
Mr. Peter Coogan
Monitoring Team Leader

REPORT NO: ECS3466
MONITORING DATE: Quarter 4 – October, 2009.
DATE: November 2009

Executive Summary

In accordance with the requirements of the company's Waste Licence (Register No. W0131-02), Advanced Environmental Solutions (AES) Ltd., are required to conduct monitoring of their Emissions to Sewers and Storm water from the Navan facility on a quarterly basis.

Bord na Móna Technical Services were commissioned to perform the sampling and analysis, which was undertaken on the 21st of October 2009.

Emission limits for trade effluent and storm water are not specified in the Waste Licence (Register No. W0131-02).

It should also be noted that this effluent is sent by tanker to the local authority wastewater treatment plant.

This report is certified as accurate and representative of the sampling and associated analysis carried out.

Respectively Submitted,

Eamonn Lee

Mr. Eamonn Lee
Environmental Scientist

Peter Coogan

Mr. Peter Coogan
Monitoring Team Leader

CONTENTS

1.0 INTRODUCTION

As part of the requirements of the company's Waste Licence (Register No. W0131-02), AES are required to conduct monitoring of the Storm Water and Emissions to Sewer on a quarterly basis. Bord na Móna Technical Services were commissioned to perform the sampling and analysis, which was undertaken on the 21st of October 2009.

This report presents details of the sampling, analytical methodologies used, and a discussion of the results obtained.

2.0 METHODOLOGY

2.1 Sampling Locations

Sampling locations are described in Table 2.1 below and marked on the map contained in Appendix 1.

TABLE 2.1: LOCATION OF SURFACE AND STORM-WATER SAMPLING STATIONS

Sample Point	Location
GWE-2 (Storm Water)	North West corner of site
GWE-3 (Storm Water)	East of the site
Emissions to Sewer	Trade Effluent Storage tank beside fuel tank

2.2 Representative Sampling

Emissions to Sewer

Grab samples of surface water were extracted in accordance with standard procedures.

Emissions to Storm Water

Storm water was collected during rainfall from the gully on the roof of the main shed.

All samples were returned to the laboratory and stored at 2-8°C.

2.3 Analysis

Analysis of samples was conducted in accordance with recognised standard methods as detailed in Table 2.2 below.

TABLE 2.2: CHEMICAL ANALYSIS OF EMISSIONS TO SEWER SAMPLES

Parameter	Limit of Detection/Range	Method
pH (pH units)	-	G/05
BOD (mg/l)	<2	G/04 Based on APHA, 2005, 21st Edition, Method 5210-B
COD (mg/l)	<10	G/03 Based on APHA, 2005, 21st Edition, Method 5220D
Conductivity (µS/cm)	-	G/06 Based on APHA, 2005, 21st Edition, Method 2510 B
Total Suspended Solids (mg/l)	<5	G/19 Based on APHA, 2005, 21st Edition, Method 2540D
Total Nitrogen (mg/l)	<1	Based on ENV 12260 1996
Ammonia-N (mg/l)	<0.02	G/67 Based on APHA, 2005, 21st Edition, Method 4500-NH3
Total Organic Carbon (mg/l)	5-500	TOC Analyser
Sulphate (mg/l)	0.5-50	G/39 Based on APHA, 2005, 21st Edition, Method 4110B
Copper (mg/l)	<0.03	G/57 Based on EPA Method 200.8
Zinc (mg/l)	<0.02	G/57 Based on EPA Method 200.8
DRO's (µg/l)	<10	GC-FID
Oils, fats & greases (mg/l)	<1	G/32 Based on APHA, 2005, 21st Edition, Method 5520B
MBAS (mg/l)	<0.05	G/24 Based on APHA, 2005, 21st Edition, Method 5540C

G/ -INAB Accredited Method, BnM Environmental and Analytical Services SOP Manual.
APHA: American Public Health Association, Standard Methods for the Examination of Waters and Wastewaters, 21st Edition, 2005.

3.0 COMMITMENT TO QUALITY

3.1 INAB Accreditation

Bord na Móna Technical Services analytical laboratories is accredited to ISO 17025 by the National Accreditation Board (INAB). ISO 17025 accreditation ensures that the laboratory operates a quality system with technically competent staff. The laboratory has accreditation since 1997 and it is the policy of the laboratory to achieve and maintain a high standard of quality consistent with client's requirements in all aspects of the work carried out within the laboratory.

3.2 Interlaboratory Proficiency Schemes

To ensure the accuracy of the analytical testing the laboratory participates in several external proficiency schemes. The ongoing competence of the laboratory and its staff is assessed by participation in various inter-laboratory proficiency testing schemes, such as LGC Aquacheck scheme and the EPA Intercalibration programme organised for environmental laboratories throughout Ireland. Bord na Móna Technical & Laboratory Services Analytical Laboratory is listed on the EPA's register of Quality Controlled Laboratories

3.3 Control Chain of Custody

As part of the Quality System in place in Bord na Móna, Technical Services, measures are taken to ensure controlled chain of custody. An outline of the chain of custody is given below.

BORD NA MÓNA

CONTROLLED CHAIN OF CUSTODY

SITE	TRANSPORT	LABORATORY
Sampling and packaging of all samples were carried out by Bord na Móna Technical Team:	Transport Document Form	Transport to laboratory by Bord na Móna Technical Team.
Mr. Peter Coogan →		Sample Reception Form →
Mr. Eamonn Lee		Receiving of samples at Bord na Móna Environmental Laboratory complex by: Laboratory Manager (Secure laboratory complex access to authorised personnel only) ↓
		Storage of all samples for 1 month period after report issue. ↓
		Supervised Disposal

4.0 RESULTS

The results of the on-site investigations carried out by Bord na Móna Technical Services are presented in Table 4.1 below.

4.1 Emissions to Sewer Results

TABLE 4.1: RESULTS OF CHEMICAL ANALYSIS OF THE EMISSIONS TO SEWER SAMPLE

Parameter	Sewer Sample Result
pH (pH units)	5.8
Total Organic Carbon (mg/l)	401
BOD (mg/l)	1113
COD (mg/l)	2078
Total Suspended Solids (mg/l)	531
Sulphate (mg/l)	483.54
**Copper (µg/l)	54
**Zinc (µg/l)	500
Oils/Fats/Greases (mg/l)	<1
**DRO (µg/l)	7530
**Mineral Oil (µg/l)	850
Detergents (MBAS) (mg/l)	0.46

** Sub-Contracted Test

It should be noted that this effluent is sent by tanker to the local authority wastewater treatment plant.

Emission limits for leachate are not specified in the Waste Licence (Register No. W0131-02).

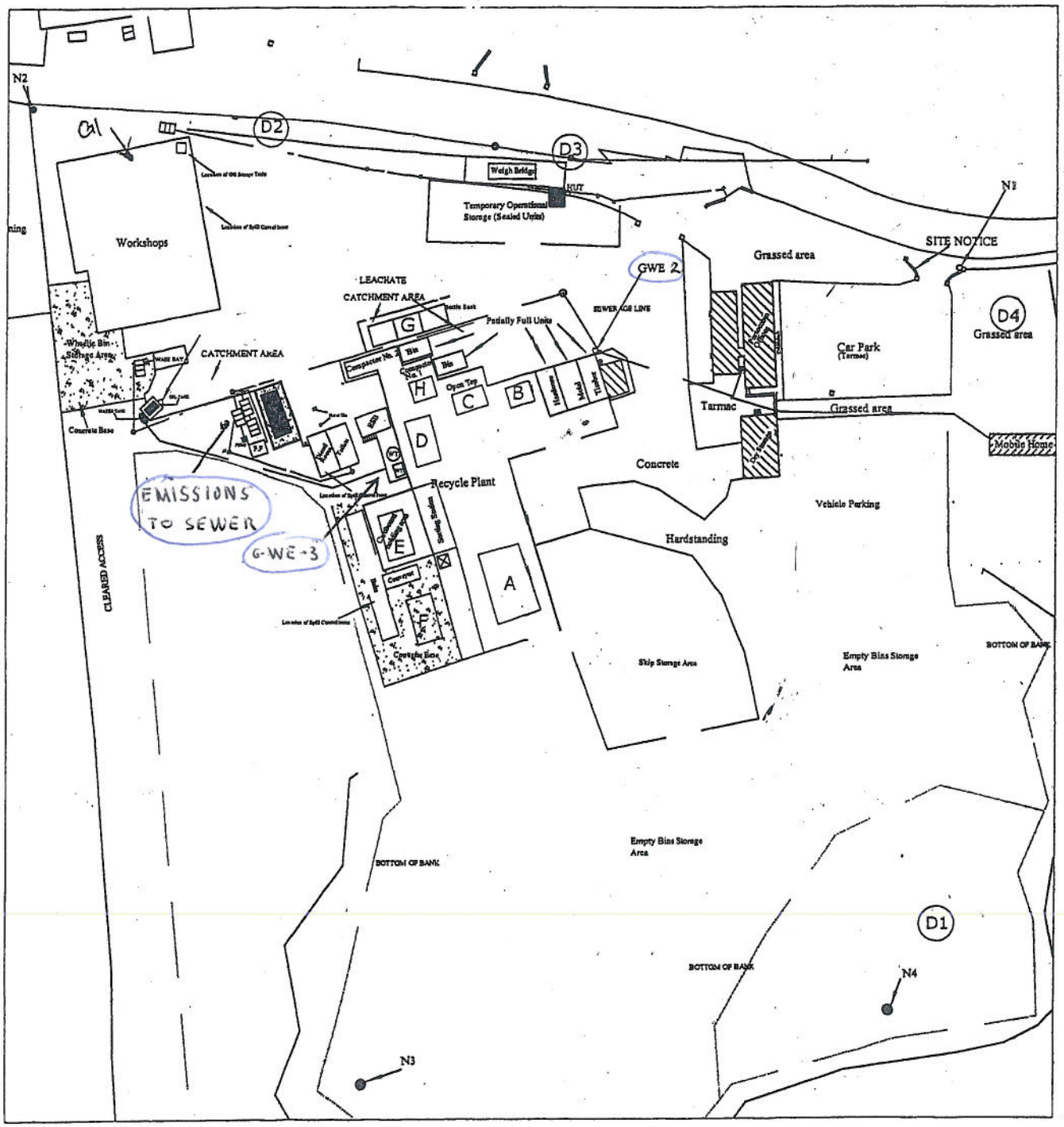
4.2 Emissions to Storm Water Results

TABLE 4.2: RESULTS OF CHEMICAL ANALYSIS OF THE EMISSIONS TO STORM WATER		
Parameter	**GWE-2**	**GWE-3**
pH (pH units)	-	-
Conductivity(µS/cm)	-	-
BOD (mg/l)	-	-
COD (mg/l)	-	-
Total Suspended Solids (mg/l)	-	-
Total Nitrogen (mg/l)	-	-
Ammonia (mg/l)	-	-

Results for GWE-2 and GWE-3 not available as no sample was collected due to minimal rain fall during monitoring.

APPENDIX 1

Map of Monitoring Locations



Monitoring Locations

Dust (D1, D2, D3, and D4)
Noise (N1, N2, N3, N4, N5, and N6)
Emissions to Groundwater
Groundwater (GW1)

BORD NA MÓNA
ENVIRONMENTAL DIVISION
NEWBRIDGE, CO. KILDARE

BORD NA MÓNA

BORD NA MÓNA ENVIRONMENTAL LIMITED

MONITORING OF BIOAEROSOL LEVELS AT THE MIDLAND WASTE FACILITY, CLONMAGGADAN, NAVAN, CO MEATH IN COMPLIANCE WITH THE REQUIREMENTS OF THEIR WASTE LICENSE REGISTER NO. W0131-02.

For the Attention of:
Ms. Linda Cahill
Environmental Officer
Advanced Environmental Solutions Ltd.
Unit 1 Monread Commercial Park
Monread Road
Naas
Co. Kildare

Prepared by:
Mr. Peter Coogan
Monitoring Team Leader

Reviewed by:
Mr. Neville Allen
Environmental Scientist

Ref: ECS3307– Bioaerosol 2009
Monitoring Date: May 2009
Reporting Date: July 2009

Executive Summary

Bord na Móna Technical Services was contracted by Advanced Environmental Solutions (AES) Ltd., facility to undertake bioaerosol sampling and analysis at their facility at Proudstown Rd, Navan, Co. Meath, in order to assess current levels of bioaerosols (*Total Fungi/Bacteria* and *Aspergillus fumigatus*) at the facility. The site was subsequently visited by a Bord na Móna Environmental Scientist on the 28th of May 2009 to conduct the monitoring event.

The bioaerosol sampling was undertaken at three locations in the vicinity of the facility (1) nearest Sensitive Receptor (On the GAA Club grounds to the south), (2) 30 meters upwind of site boundary (West Boundary) and (3) down wind of site boundary (As wind was from west this was taken on the GAA ground to the north of the GAA car park). These locations were selected following a review of the prescribed sampling locations in the UK Composting Association's – *Standardized Protocol for the Sampling and Enumeration of Airborne Micro-organisms at Composting Facilities 1999.*

Results of bioaerosols indicated that bacteria levels were present at the downwind (254cfu/m^3), Sensitive Receptor (345 cfu/m^3) and upwind (27 cfu/m^3) locations for *Total Bacteria.*

Aspergillus fumigatus was not detected at the upwind and downwind locations but at the sensitive receptor sample location (1.4 cfu/m3) during the monitoring event.

Bioaerosols are constantly present in the ambient atmosphere as a consequence of dust from soil and the natural breakdown of vegetation. Measured ambient levels of bacteria and fungi vary over a wide range. A recent review reported on a number of studies that highlighted airborne fungi levels of 0 to 94,000cfu/m^3 and airborne bacteria to range from 2 to 17,600cfu/m^3 (1).

This report is certified as accurate and representative of the sampling and associated analysis carried out.

Respectively Submitted,

Mr. Peter Coogan
Monitoring Team Leader

Mr. Neville Allen
Environmental Scientist

CONTENTS

1.0 INTRODUCTION

In compliance with the requirements of their Waste Licence (Register No. W0131-02), AES is required to conduct bioaerosol monitoring on an annual basis.

Bord na Móna Technical Services, was commissioned to undertake the sampling and reporting. The site was visited by an Environmental Scientist from Bord na Móna Environmental Services on the 21st May 2008.

This report presents details of the sampling and analytical methodology carried out together with a broad interpretation of the results.

2.0 METHODOLOGY

Currently there is no specific methodology defined by the Environmental Protection Agency in Ireland for the sampling and analysis of Bioaerosols In the absence of a specific methodology, Bord na Móna Technical Services utilized the UK Composting Association's – *Standardized Protocol for the Sampling and Enumeration of Airborne Micro-organisms at Composting Facilities.* This protocol is designed for operating sites and although the site is currently not operational the procedures were adopted slightly, and revised sampling procedures (See section 2.1.2) were followed in order to ensure that future sampling be standardized and that cross referencing of results will have validity.

2.1 Bioaerosol Sampling

2.1.1 Sampling Equipment

2 x Single Stage N6 Andersen Samplers
2 x Vacuum Pumps
2 x Tripod
1 x Dry Gas Meter
18 x Agar Plates
Digital Watch
Anemometer / Thermometer
Consumables – e.g. Ethanol, Indelible Pen.

2.1.2 Sampling Procedure

Two samplers were erected at each sampling location (see table 2.1 below for description of sampling locations). Following cleaning of samplers using ethanol swabs, the agar plates were inserted into the Andersen sampler. Vacuum pumps were started in parallel and ran for the specified time period. Throughout the sampling period climatic data was recorded at 5 minute intervals. Following the completion of the specified time period, the pumps were turned off and the plates removed from the Andersen samplers and stored in sealed plastic bags prior to transportation to laboratory. This process was repeated at each location giving a total of 4 samples from each location. (2 for *Aspergillus fumigatus* and 2 for *Total Count.* The sample flow rate for all samples was 28.3 l/min. A total of 2 blanks are required per monitoring event. Blank 1 is placed in the switched off sampling equipment for a period of 25 minutes at downwind location.. Blanks 2 are plates which remain in a sealed bag throughout the day.

2.2 Monitoring Location

Table 2.1 describes the Bioaerosol sampling locations and are also contained in the monitoring map attached in Appendix 1.

TABLE 2.1: LOCATION OF BIOAEROSOL SAMPLING POSITIONS		
Sampling Station	**Identity**	**Boundary Location**
Location 1	SR 1/2 A/B	Sensitive Receptor (South of GAA Club House to NE of Site)
Location 2	UW 1/2 A/B	Upwind boundary 30 m west of the AES Boundary site
Location 3	DW 1/2 A/B	Downwind location * North of GAA Club House to NE of Site)

2.3 Sampling Time

A sampling period of 25 minutes was used as stipulated in UK Composting Association's – *Standardized Protocol for the Sampling and Enumeration of Airborne Micro-organisms at Composting Facilities.1999*

2.4 Climatic Conditions

Weather conditions throughout the duration of the sampling period were generally dry with a slight breeze throughout the day. The cloud cover was between 60% and 100% through out the sampling exercise. The relative humidity averaged at 50% and wind speed ranged between 1.29 and 2.21 m/sec with wind direction steady from a westerly direction.

On-site observations made during the monitoring event noted that the only activities associated with the AES facility were the general day to day activities typical of the recycling plant.

3.0 RESULTS

Tables 3.1 - 3.4 below present the results of the Bioaerosol Monitoring at the AES Waste facility on the 28th May 2009.

TABLE 3.1: RESULTS OF TOTAL BACTERIA MONITORING			
Sampling Location	Time	Total No. of Colonies	Concentration cfu/m^3
UW1A	11:20 – 11:45	12	17
SR1A	12:25 – 12:50	110	155.5
DW1A	13:45 – 14:10	180	254
UW2B	14:40 – 15:05	19	27
SR2B	15.20 – 15:45	244	345
DW2B	15:55 – 16:20	124	175.3

TABLE 3.2: RESULTS OF ASPERGILLUS MONITORING			
Sampling Location	Time	Total No. of Colonies	Concentration cfu/m^3
UW1A	11:20 – 11:45	0	0
SR1A	12:25 – 12:50	1	1.4
DW1A	13:45 – 14:10	0	0
UW2B	14:40 – 15:05	0	0
SR2B	15.20 – 15:45	0	0
DW2B	15:55 – 16:20	0	0

TABLE 3.3: BLANK RESULTS – TOTAL BACTERIA			
Sampling Location	Time	Total No. of Colonies	Concentration cfu/m^3
Blank 1 (Bag)	NA	0	0
Blank 2 (DW A)	16:30 – 16:55	1	1.4

TABLE 3.4: BLANK RESULTS – ASPERGILLUS			
Sampling Location	Time	Total No. of Colonies	Concentration cfu/m^3
Blank 1 (Bag)	NA	0	0
Blank 2 (DW A)	16:30 – 16:55	0	0

Blank 1 – Field blanks are sealed and placed in an air tight bag throughout the sampling program on the day.

Blank 2 – The field blank is placed in the pumps for 25min at the downwind location but no air is drawn onto the plaits.

4.0 DISCUSSION

Bioaerosols are constantly present in the ambient atmosphere as a consequence of dust from soil and the natural breakdown of vegetation. Measured ambient levels of bacteria and fungi vary over a wide range. A recent review reported on a number of studies that highlighted airborne fungi levels of 0 to 94,000cfu/m^3 and airborne bacteria to range from 2 to 17,600cfu/m^3 (1).

The results for the 2009 monitoring event for the AES – Midlands Waste Ltd site are detailed in tables 3.1 → 3.4.

Aspergillus fumigatus was not detected at the downwind and upwind monitoring locations. Minimal levels of *Aspergillus fumigatus* (1.4 cfu/m3) where detected at the sensitive receptor monitoring location.

Upwind

Bioaerosols were Lowest at the upwind location where the maximum concentration for *Total Bacteria* was 27 cfu/m^3. *Aspergillus fumigatus* was not detected at the upwind monitoring location.

Downwind

The maximum level recorded for *Total Bacteria* at the downwind location was 254 cfu/m^3, while the minimum concentration detected was 175.3 cfu/m^3. The downwind monitoring point was located on the north side of the GGA club car park. The wind on the day of sampling was from a westerly direction, therefore the wind blew from the direction of AES facility towards the downwind location (GAA Club House). *Aspergillus fumigatus* was not detected at the downwind monitoring location.

Sensitive Receptor

The maximum level recorded for *Total Bacteria* at the sensitive receptor was 345 cfu/m^3, while the minimum concentration detected was 155.5 cfu/m^3. The sensitive receptor monitoring point was located on the south side of the GGA club close to the main access road to the AES Navan facility. The wind on the day of sampling was from a westerly direction, therefore the wind blew from the direction of AES facility towards the sensitive receptor location (GAA Club House). Minimal levels of *Aspergillus fumigatus* (1.4 cfu/m3) where detected at the sensitive receptor monitoring location.

Because the wind direction on the day of sampling was from the west, both the downwind and sensitive receptor were located on the grounds of the GAA club. The downwind was to the north of the GAA club and the sensitive receptor to the south.

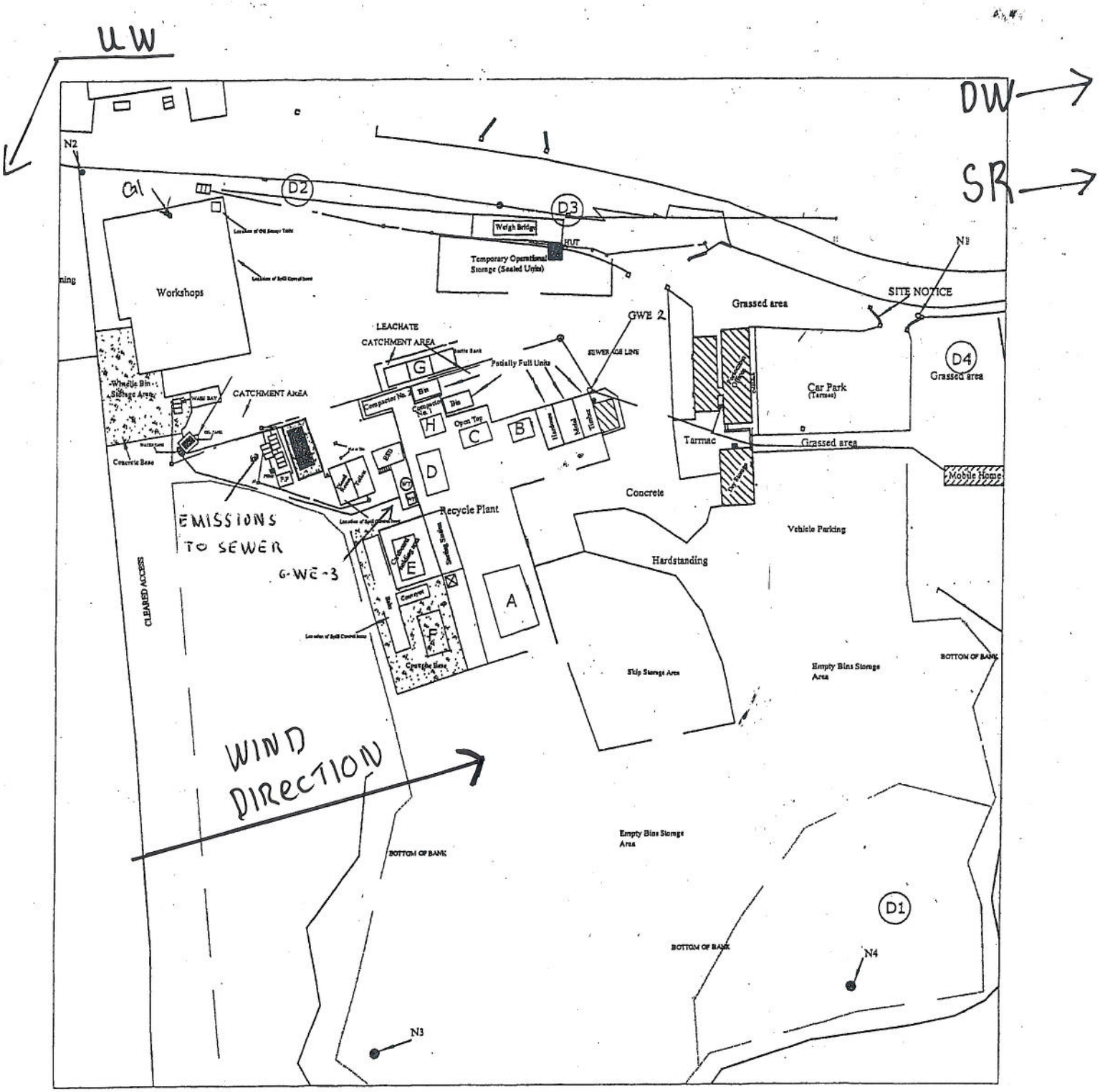
Comparing the results of the upwind location to that of the sensitive receptor, there was an increase from 17 cfu/m^3 to 345 cfu/m^3. As the wind was from the west and blew across the AES site, it is considered that there may be some contribution of bioaerosols from the direction of the AES site, however the results are low when comparing them to that of the studies conducted (1), which highlights that airborne fungi and bacteria levels can range from 0 to 94,000cfu/m^3 and 2 to 17,600cfu/m^3 respectively.

5.0 REFERENCES

(1) Swan et al. Occupational and Environmental exposure to bioaerosols from composts and potential health effects- A critical review of published data. Research report 130. 2003.

APPENDIX 1

Map of Monitoring Locations



Monitoring Locations

Dust (D1, D2, D3, and D4)
Noise (N1, N2, N3, N4, N5, and N6)
Emissions to Groundwater
Groundwater (GW1)

BORD NA MÓNA
ENVIRONMENTAL DIVISION
NEWBRIDGE, CO. KILDARE

ENVIRONMENTAL ASSESSMENT OF THE QUALITY OF GROUNDWATER'S AT THE ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD. SITE AT PROUDSTOWN RD, NAVAN, CO. MEATH IN ACCORDANCE WITH WASTE LICENCE REGISTER NO. W0131-02

For the Attention of:
Ms. Linda Cahill
Environmental Officer
Advanced Environmental Solutions (Ireland) Ltd.
Unit 1 Monread Commercial Park
Monread Road
Naas
Co. Kildare

Prepared by:
Mr. Peter Coogan
Monitoring Team Leader

Reviewed by:
Ms. Natalie Duncan
Environmental Scientist

REPORT NO: ECS3227
MONITORING PERIOD: Biannual 1 2009
REPORT DATE: January 2009

Executive Summary

In accordance with the requirements of the company's Waste Licence (Register No. W0131-02), Advanced Environmental Solutions (AES) Ltd., are required to conduct monitoring of the Groundwater underlying the Navan facility on a biannual basis.

AES Navan have recently connected to the county council water mains as a mean of water supply to the site. Because of the recent connection the options of groundwater sampling at the AES facility were limited. To over come this problem, a sample of groundwater was extracted from a tap located in the neighbouring facility (kilsaran well). This would provide a good representation of the underlying groundwater's within and around the vicinity of the AES Navan site.

As part of the investigations, a grab sample of water from the mains supply was extracted from a tap (GW-1) located in the garage within the AES facility. These results are used for comparison reasons only as requested by AES personnel.

Bord na Móna Technical Services were commissioned to perform the sampling and analysis, which was undertaken on the 12th of February 2009.

This report is certified as accurate and representative of the sampling and associated analysis carried out.

Respectively Submitted,

Mr. Peter Coogan	Ms. Natalie Duncan
Monitoring Team Leader	Environmental Scientist

CONTENTS

1.0 INTRODUCTION

As part of the requirements of the company's Waste Licence (Register No. W0131-02), AES are required to conduct monitoring of the Groundwater underlying the Navan facility on a biannual basis.

In recent weeks monitoring point GW-1 (tap located in the workshop), which was supplied by water from the Kilsaran well, was connected to the town mains as a means of water supply to the site. As there were no access to groundwater's on the AES site, a grab sample was extracted from a well via a tap (Kilsaran well) located in the neighbouring industrial facility. This would represent the quality of the groundwater's underlying the AES Navan facility.

A second sample from the county council water supply (GW-1) was also extracted for comparison reasons as requested by AES personnel.

Bord na Móna Technical Services were commissioned to perform the sampling and analysis, which was undertaken on the 12th of February 2009.

This report presents details of the sampling, analytical methodologies used, and results obtained.

2.0 METHODOLOGY

2.1 Sampling Locations

Sampling locations are described in Table 2.1 and marked on the map contained in Appendix 2.

TABLE 2.1: SAMPLE LOCATIONS	
Sample Point	**Location**
Kilsaran (Groundwater)	(Kilsaran well) Tap on left hand wall in workshop in Kilsaran adjacent to AES
GW-1 (Groundwater)	Tap on right hand wall in workshop

2.2 Representative Sampling

Groundwater

Groundwater in the well casing and in close proximity to the well is not considered representative of the general groundwater at a given location. In order to ensure that the groundwater sample extracted from the discharge point was representative of the water held in the well, and not water held stagnant in the pipeline, it was necessary to evacuate the pipeline prior to sampling.

Samples from the Kilsaran well were collected from the nearest sampling point to the well head, which is a tap in the workshop shed within the Kilsaran facility, linked directly to the well. Prior to sampling, approximately 300 litres of water (where feasible) was allowed to run to ensure that all stagnant water from the pipeline was removed and that a representative sample was being collected.

Samples from the town mains supply (GW-1) were collected from a tap in the workshop shed within the AES facility. Prior to sampling, approximately 300 litres of water was allowed to run to ensure that all stagnant water from the pipeline was removed and that a representative sample was being collected.

All samples were returned to the laboratory and stored at 2-8°C.

2.3 Analysis

Analysis of samples was conducted in accordance with recognised standard methods as detailed in Table 2.2 below.

TABLE 2.2: CHEMICAL ANALYSIS OF GROUNDWATER SAMPLES

Parameter	Limit of Detection/Range	Method
pH (pH units)	-	G/05 Based on APHA, 2005, 21st Edition, Method 4500 H+B
Conductivity (µS/cm)	-	G/06 Based on APHA, 2005, 21st Edition, Method 2510 B
COD (mg/l)	<10	G/03 Based on APHA, 2005, 21st Edition, Method 5220D
Fluoride (mg/l)	<0.1	G/39 Based on APHA, 2005, 21st Edition, Method 4110B
Ammonia-N (mg/l)	<0.02	G/67 Based on APHA, 2005, 21st Edition, Method 4500-NH3
Nitrate-N (mg/l)	<0.2	G/67 Based on APHA, 2005, 21st Edition, Method 4500-N02B
Total Nitrogen (mg/l)	<1	Based on ENV 12260 1996
Chloride (mg/l)	<2	Based on G67 Konelab
USEPA Method 524.2 * (µg/l)	<10	G/61 BASED ON USEPA 524.2 method
**Total Coliforms (MPN/100ml)	<1	ESGM107
**Faecal coliforms (MPN/100ml)	<1	ESGM107

*- Refer to Appendix 1 for USEPA compounds listing
**- Sub-Contracted Test
G/ -INAB Accredited Method, BnM Environmental and Analytical Services SOP Manual.
ASTM - American Society for Testing and Materials, Annual Book of ASTM Standards 1997.

3.0 COMMITMENT TO QUALITY

3.1 INAB Accreditation

Bord na Móna Technical Services analytical laboratories is accredited to ISO 17025 by the National Accreditation Board (INAB). ISO 17025 accreditation ensures that the laboratory operates a quality system with technically competent staff. The laboratory has accreditation since 1997 and it is the policy of the laboratory to achieve and maintain a high standard of quality consistent with client's requirements in all aspects of the work carried out within the laboratory.

3.2 Interlaboratory Proficiency Schemes

To ensure the accuracy of the analytical testing the laboratory participates in several external proficiency schemes. The ongoing competence of the laboratory and its staff is assessed by participation in various inter-laboratory proficiency testing schemes, such as LGC Aquacheck scheme and the EPA Intercalibration programme organised for environmental laboratories throughout Ireland. Bord na Móna Technical & Laboratory Services Analytical Laboratory is listed on the EPA's register of Quality Controlled Laboratories

3.3 Control Chain of Custody

As part of the Quality System in place in Bord na Móna, Technical Services, measures are taken to ensure controlled chain of custody. An outline of the chain of custody is given below

BORD NA MÓNA

CONTROLLED CHAIN OF CUSTODY

SITE		TRANSPORT		LABORATORY
Sampling and packaging of all samples were carried out by Bord na Móna Technical Team:	Transport Document Form	Transport to laboratory by Bord na Móna Technical Team.	Sample Reception Form	Receiving of samples at Bord na Móna Environmental Laboratory complex by: Laboratory Manager (Secure laboratory complex access to authorised personnel only)
Mr. Peter Coogan	→		→	↓
				Storage of all samples for 1 month period after report issue.
				↓
				Supervised Disposal

4.0 RESULTS

The results of the on-site investigations carried out by Bord na Móna Technical Services are presented in Table 4.1 below.

4.1 Groundwater Results

TABLE 4.1: RESULTS OF CHEMICAL ANALYSIS OF THE GROUNDWATER SAMPLE

Parameter	Concentration	
	GW-1	Kilsaran
pH (pH units)	7.4	8.0
Conductivity @ 25ºC (□S/cm)	452	853
COD (mg/l)	11	<10
Chloride (mg/l)	17	26
Fluoride (mg/l)	0.45	<0.01
Ammonia-N (mg/l)	<0.02	<0.02
*Total Nitrogen mg/l	3.0	<1.00
Nitrate as N(mg/l)	2.86	0.3
**Total Coliforms (MPN/100ml)	0	0
**Faecal Coliforms (MPN/100ml)	0	0

* Non INAB accredited test
** Sub-Contracted Test

Results of USEPA 524.2 compound list

TABLE 4.2: LIST OF COMPONENTS ANALYSED FOR AS PER USEPA METHOD 524.2					
Parameter	**Result**		**Parameter**	**Result**	
	Kilsaran	GW-1		Kilsaran	GW-1
Dichlorodiflouromethane.	<10	<10	Chloromethane	<10	<10
Vinyl chloride	<10	<10	Bromoethane	<10	<10
Chloroethane	<10	<10	Trichloroflourmethane	<10	<10
1,1-Dichloroethene	<10	<10	Methylene Chloride	<10	<10
trans-1,2-Dichloroethene	<10	<10	1,1-Dichloroethane	<10	<10
Bromochloromethane	<10	<10	cis-1,2-Dichloroethene	<10	<10
1,1,1-Trichloroethane	<10	<10	2,2-Dichloropropane	<10	<10
1,1-Dichloropropene	<10	<10	Chloroform	<10	**19**
1,2-Dichloroethane	<10	<10	Carbon tetrachloride	<10	<10
Bromodichloromethane	<10	**10**	Benzene	<10	<10
Toluene	<10	<10	Trichloroethene	<10	<10
1,1,2-Trichloroethane	<10	<10	1,2-Dichloropropane	<10	<10
1,2-Dibromoethane	<10	<10	Dibromoethane	<10	<10
1,1,2,2-Tetrachloroethane	<10	<10	cis-1,3-Dichloropropene	<10	<10
m-Xylene	<10	<10	trans-1,3-Dichloropropene	<10	<10
o-Xylene	<10	<10	Tetrachloroethene	<10	<10
Bromoform	<10	<10	1,3-Dichloropropane	<10	<10
Bromobenzene	<10	<10	Dibromochloromethane	<10	<10
n-propylbenzene	<10	<10	Chlorobenzene	<10	<10
1,3,5-Trimethylbenzene	<10	<10	Ethylbenzene	<10	<10
tert-Butylbenzene	<10	<10	p-Xylene	<10	<10
sec-Butylbenzene	<10	<10	Styrene	<10	<10
1,2-Dibromo-3-	<10	<10	Isopropylbenzene	<10	<10
chloropropane	<10	<10	1,2,3-Trichloropropane	<10	<10
Hexachlorobutadiene	<10	<10	2-Chlorotoluene	<10	<10
1,2,3 Trichlorobenzene	<10	<10	4-Chlorotoluene	<10	<10
n-Butylbenzene	<10	<10	1,2,4-Trimethylbenzene	<10	<10
1,2-Dichlorobenzene	<10	<10	1,3-Dichlorobenzene	<10	<10
1,2,4-Trichlorobenzene	<10	<10	Naphthalene	<10	<10

APPENDIX 1

Map of Monitoring Locations

BORD NA MÓNA

BORD NA MÓNA ENVIRONMENTAL LIMITED

ENVIRONMENTAL ASSESSMENT OF THE QUALITY OF FOUL AND GROUND WATERS AT THE ADVANCED ENVIRONMENTAL SOLUTIONS (IRELAND) LTD. SITE AT PROUDSTOWN RD, NAVAN, CO. MEATH IN ACCORDANCE WITH WASTE LICENCE REGISTER NO. W0131-02

For the Attention of:
Ms. Linda Cahill
Environmental Officer
Advanced Environmental Solutions (Ireland) Ltd.
Unit 1 Monread Commercial Park
Monread Road
Naas
Co. Kildare

Prepared by:
Mr. Peter Coogan
Monitoring Team Leader

Reviewed by:
Mr. Ronan Connolly
Environmental Scientist

REPORT NO: ECS3381
MONITORING DATE: Biannual 2 and Quarter 3 July 2009
DATE: September 2009

Executive Summary

In accordance with the requirements of the company's Waste Licence (Register No. W0131-02), Advanced Environmental Solutions (AES) Ltd., are required to conduct monitoring of the Groundwater underlying the Navan facility on a biannual basis. Additionally, monitoring of their Emissions to Sewers and Storm water from the Navan facility is required to be carried out on a quarterly basis.

Bord na Móna Technical Services were commissioned to perform the sampling and analysis, which was undertaken on the 17th of July 2009.

Emission limits for trade effluent and storm water are not specified in the Waste Licence (Register No. W0131-02).

It should also be noted that this effluent is sent by tanker to the local authority wastewater treatment plant.

This report is certified as accurate and representative of the sampling and associated analysis carried out.

Respectively Submitted,

Mr. Peter Coogan
Monitoring Team Leader

Mr. Ronan Connolly
Environmental Scientist

CONTENTS

1.0 INTRODUCTION

As part of the requirements of the company's Waste Licence (Register No. W0131-02), AES are required to conduct monitoring of the Groundwater underlying the Navan facility on a biannual basis, and monitoring of their Emissions to Sewer and Storm water on a quarterly basis. Bord na Móna Technical Services were commissioned to perform the sampling and analysis, which was undertaken on the 17th of July 2009.

This report presents details of the sampling, analytical methodologies used, and a discussion of the results obtained.

2.0 METHODOLOGY

2.1 Sampling Locations

Sampling locations are described in Table 2.1 below and marked on the map contained in Appendix 1.

TABLE 2.1: LOCATION OF SURFACE AND GROUND WATER SAMPLING STATIONS

Sample Point	Location
GW-1 (Groundwater)	(Kilsaran well) Tap on left hand wall of workshop in Kilsaran facility
Emissions to Sewer	Trade Effluent Storage tank beside fuel tank

2.2 Representative Sampling

Emissions to Sewer

Grab samples of surface water were extracted in accordance with standard procedures.

Groundwater

Groundwater in the well casing and in close proximity to the well is not considered representative of the general groundwater at a given location. In order to ensure that the groundwater sample extracted from the discharge point was representative of the water held in the well, and not water held stagnant in the pipeline, it was necessary to evacuate the pipeline prior to sampling.

Samples from the Kilsaran well were collected from the nearest sampling point to the well head, which is a tap in a shed within the Kilsaran facility, linked directly to the well. Prior to sampling, approximately 300 litres of water (where feasible) was allowed to run to ensure that all stagnant water from the pipeline was removed and that a representative sample was being collected.

All samples were returned to the laboratory and stored at 2-8°C.

2.3 Analysis

Analysis of samples was conducted in accordance with recognised standard methods as detailed in Table 2.2 below.

TABLE 2.2: CHEMICAL ANALYSIS OF SAMPLES

Parameter	Limit of Detection/Range	Method
pH (pH units)	-	G/05 Based on APHA, 2005, 21st Edition, Method 4500 H+B
Conductivity (S/cm)	-	G/06 Based on APHA, 2005, 21st Edition, Method 2510 B
BOD (mg/l)	<2	G/04 Based on APHA, 2005, 21st Edition, Method 5210-B
COD (mg/l)	<10	G/03 Based on APHA, 2005, 21st Edition, Method 5220D
Total Suspended Solids (mg/l)	<5	G19 Based on APHA, 2005, 21st Edition, Method 2540D
Ammonia-N (mg/l)	<0.02	G/67 Based on APHA, 2005, 21st Edition, Method 4500-NH3
Total Nitrogen (mg/l)	<1	Based on ENV 12260 1996
Total Organic Carbon (mg/l)	5-500	TOC Analyser
Chloride (mg/l)	0.5-50	Ion Chromatography
Sulphate (mg/l)	0.5-50	
Nitrate-N (mg/l)	<0.04-	
Copper (mg/l)	<0.03	G/57 Based on EPA Method 200.8
Zinc (mg/l)	<0.02	G/57 Based on EPA Method 200.8
Volatile Organics* (g/l)	<10	USEPA Method 524.2 Purge and Trap, GC-MS
Non Purgeable Organics (mg/l)	<0.5	GC-FID
DROs (µg/l)	<10	GC-FID
Oils, fats & greases (mg/l)	<1	G/32 Based on APHA, 2005, 21st Edition, Method 5520B
MBAS (mg/l)	<0.05	G/24 Based on APHA, 2005, 21st Edition, Method 5540C
Total Coliforms (MPN/100ml)	<1	Based on IDEXX's patented Defined Substrate Technology
Faecal coliforms (MPN/100ml)	<1	Based on IDEXX's patented Defined Substrate Technology

G/ -INAB Accredited Method, BnM Environmental and Analytical Services SOP Manual.
APHA: American Public Health Association, Standard Methods for the Examination of Waters and Wastewaters, 21st Edition, 2005.

3.0 COMMITMENT TO QUALITY

3.1 INAB Accreditation

Bord na Móna Technical Services analytical laboratories is accredited to ISO 17025 by the National Accreditation Board (INAB). ISO 17025 accreditation ensures that the laboratory operates a quality system with technically competent staff. The laboratory has accreditation since 1997 and it is the policy of the laboratory to achieve and maintain a high standard of quality consistent with client's requirements in all aspects of the work carried out within the laboratory.

3.2 Interlaboratory Proficiency Schemes

To ensure the accuracy of the analytical testing the laboratory participates in several external proficiency schemes. The ongoing competence of the laboratory and its staff is assessed by participation in various inter-laboratory proficiency testing schemes, such as LGC Aquacheck scheme and the EPA Intercalibration programme organised for environmental laboratories throughout Ireland. Bord na Móna Technical & Laboratory Services Analytical Laboratory is listed on the EPA's register of Quality Controlled Laboratories

3.3 Control Chain of Custody

As part of the Quality System in place in Bord na Móna, Technical Services, measures are taken to ensure controlled chain of custody. An outline of the chain of custody is given below.

BORD NA MÓNA

CONTROLLED CHAIN OF CUSTODY

SITE		TRANSPORT		LABORATORY
Sampling and packaging of all samples were carried out by Bord na Móna Technical Team:	Transport Document Form	Transport to laboratory by Bord na Móna Technical Team.	Sample Reception Form	Receiving of samples at Bord na Móna Environmental Laboratory complex by: Laboratory Manager (Secure laboratory complex access to authorised personnel only)
Mr. Peter Coogan	→		→	↓
				Storage of all samples for 1 month period after report issue.
				↓
				Supervised Disposal

4.0 RESULTS

The results of the on-site investigations carried out by Bord na Móna Technical Services are presented in Table 4.1 below.

4.1 Groundwater Results

TABLE 4.1: RESULTS OF CHEMICAL ANALYSIS OF THE GROUNDWATER SAMPLE	
Parameter	**Concentration**
	Kilsaran
pH (pH units)	7.7
Conductivity @ 25°C (□S/cm)	805
COD (mg/l)	<10
Chloride (mg/l)	25.97
Fluoride (mg/l)	<0.10
Ammonia-N (mg/l)	<0.02
*Total Nitrogen mg/l	<1.00
Nitrate as N(mg/l)	0.22
**Total Coliforms (MPN/100ml)	37
**Faecal Coliforms (MPN/100ml)	0
*VOC's USEPA 524.2 (µg/l)	<10

* Non INAB accredited test
** Sub-Contracted Test

4.2 Emissions to Sewer Results

TABLE 4.2: RESULTS OF CHEMICAL ANALYSIS OF THE EMISSIONS TO SEWER SAMPLE	
Parameter	**Sewer Sample**
pH (pH units)	5.5
Total Organic Carbon (mg/l)	1,251
BOD (mg/l)	2,275
COD (mg/l)	3,725
Total Suspended Solids (mg/l)	638
Sulphate (mg/l)	425.64
*Copper (µg/l)	35
*Zinc (µg/l)	674
*Oils/Fats/Greases (mg/l)	38
**DRO (µg/l)	41,000
**Mineral Oil (µg/l)	39,900
Detergents (MBAS) (mg/l)	0.34

* Non INAB accredited test
** Subcontracted Test

It should be noted that this effluent is sent by tanker to the local authority wastewater treatment plant.

Emission limits for leachate are not specified in the Waste Licence (Register No. W0131-02).

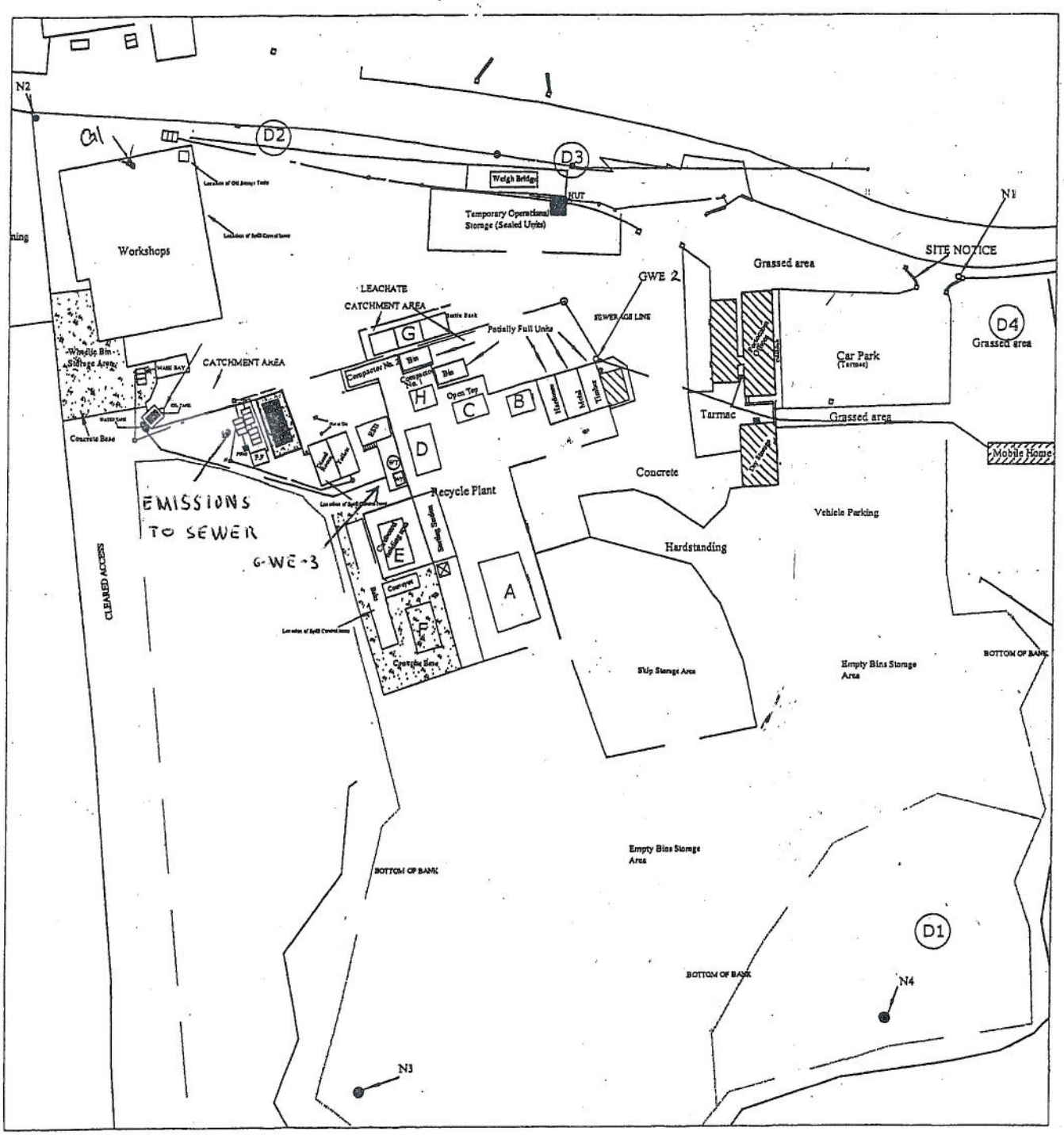
The ground water sample was extracted from a tap located in a shed next to the office in the Kilsaran facility. The tap water is sourced from a well located on the Kilsaran site.

4.3 Emissions to Storm Water Results

Results for GWE-2 and GWE-3 not available as no sample was collected due to minimal rain fall during monitoring.

APPENDIX 1

Map of Monitoring Locations



Monitoring Locations

Dust (D1, D2, D3, and D4)
Noise (N1, N2, N3, N4, N5, and N6)
Emissions to Groundwater
Groundwater (GW1)

BORD NA MÓNA
ENVIRONMENTAL DIVISION
NEWBRIDGE, CO. KILDARE

Appendix III

Reported Incidents

Environmental Logsheet		Document: EPF 4.1
Document Approved By: Francis Flynn General Manager	Midland Waste Disposal Ltd	Revision: 0 Page: 1 of 1

Title:

Environmental Incident Investigation Report Form

Report No.	10	Date and Time Recorded	/ / am/pm	Date and Time of Incident	/ / am/pm July/Aug 2009
Nature of Incident	Dust Monitoring (Depasition) Exceeded at monitoring points D2 and D3 (Front of Site), as per BNM report ECS 3381 September 2009				
Cause of Incident	Mainly OFF Site Activities.				
Environmental Significance of Incident	N/A				
Personnel Involved/Affected	N/A				
Statutory Bodies Informed and Details	EPA via LETTER And copy Monitoring Report.				
Consequences of Incident	N/A				
Corrective Action Required?	Yes / No	Corrective Action Report No.			
Signed:	Francis Flynn	Date	28th September 2009		

Environmental Corrective Action Report Form	Midland Waste Disposal Ltd	Document: EPF 1.1
Document Approved By: Francis Flynn, General Manager	ENVIRONMENTAL PROCEDURES	Revision: 0 Page: 1 of 1

Title: **Environmental Corrective/Preventive Action Report Form**

Reference Number	0023	Date	26 / 9 / 2009	Initiator:	Francis Flynn

Nature of Non-Compliance? Actual ✓ / Potential

Description of Non-Compliance: Dust Monitoring at D2 and D3 exceeding Licence limits as per Monitoring Report ECS 3381

Bodies Informed, Date and Details: EPA via Letter and Monitoring Report

Identified as a Result of: BNM Monitoring

Identified by: | Date of Identification: / /

Action Plan: No Action Plan as High Levels of Dust resulted from front of site and during Monitoring period there was ongoing groundworks at Kilsaran site which resulted in high dust levels. Additionally our road sweeper was broke down for 3/4 dry days which may have contributed to higher than normal readings on Directional D35. This is now rectified.

Responsibility:

Target Date for Completion: / / | Actual Date of Completion: / /

Closed by (Signature and Title): Francis Flynn | Date: 26 / 9 / 2009

Env. Inc. Inv. Rep. Form:	Midland Waste Disposal Ltd	Document: EPF 3.2
Francis Flynn General Manager	ENVIRONMENTAL PROCEDURES	Revision: 0 Page: 1 of 1

Title: **Environmental Notification Form**

Company Name:	Midland Waste	Phone No.:		Contact Person:	Francis Flynn	Phone No.:	
		Fax. No.:				Fax No.:	
Location of Incident:	Midland Waste						
Date and Time of Incident:	July/August 2009			Duration of Incident:			
Nature of Incident:	DUST					Has source been isolated?	
Source of Incident:							
Cause of Incident	Off Site Activities						
Environmental Significance of the Incident:	N/A						
Corrective Action Taken?:	N/A	Corrective Action Ref. No.:		Environmental Incident Investigation Report Form Completed?			
Preventive Action Taken?	N/A	Preventive Action Ref. No.:		Remedial Action Taken?		Ref. No.:	
Emergency Services Contacted?:	N/A						
Details of Other Bodies Contacted:	EPA via Letter and Report						
Signed:	Francis Flynn						

Environmental Logsheet		Document: EPF 4.1
Document Approved By: FRANCIS FLYNN General Manager	Midland Waste Disposal Ltd	Revision: 0 Page: 1 of 1

Title:

Environmental Incident Investigation Report Form

Report No.	10	Date and Time Recorded	/ / am/pm	Date and Time of Incident	/ / am/pm May/June 2009
Nature of Incident	DUST Monitoring at DS N, E, W, exceeded permitted limit as outlined in Report of ECS 3307 DUST June 2009				
Cause of Incident	OFF Site Activities East of Site				
Environmental Significance of Incident	N/A				
Personnel Involved/Affected	N/A				
Statutory Bodies Informed and Details	EPA VIA Letter and Report				
Consequences of Incident	N/A ALL other Dust Monitoring Areas within Site are within Limits.				
Corrective Action Required?	Yes / No	Corrective Action Report No.			
Signed:	Frances Flynn	Date	6th August 2009		

Env. Inc. Inv. Rep. Form.	Midland Waste Disposal Ltd	Document: EPF 3.2
Francis Flynn General Manager	ENVIRONMENTAL PROCEDURES	Revision: 0 Page: 1 of 1

Title: **Environmental Notification Form**

Company Name:	Midland Waste	Phone No.: Fax. No.:		Contact Person:	Frances Flynn	Phone No.: Fax No.:	
Location of Incident:	Midland Waste						
Date and Time of Incident:	May June 2009	Duration of Incident:	N/A				
Nature of Incident:	Dust			Has source been isolated?	N/A		
Source of Incident:							
Cause of Incident	OFF Site Activity						
Environmental Significance of the Incident:	N/A						
Corrective Action Taken?:	N/A	Corrective Action Ref. No.:		Environmental Incident Investigation Report Form Completed?			
Preventive Action Taken?	N/A	Preventive Action Ref. No.:		Remedial Action Taken?		Ref. No.:	
Emergency Services Contacted?:	N/A						
Details of Other Bodies Contacted:	EPA via Letter And Report						
Signed:	Francis Flynn						

Environmental Corrective Action Report Form	Midland Waste Disposal Ltd	Document: EPF 1.1
Document Approved By: F. Flynn General Manager	ENVIRONMENTAL PROCEDURES	Revision: 0 Page: 1 of 1

Title: **Environmental Corrective/Preventive Action Report Form**

Reference Number	0022	Date	6/8/2009	Initiator:	Francis Flynn

Nature of Non-Compliance? Actual / Potential

Description of Non-Compliance

Dust Monitoring at D3 exceeded permitted limits as outlined in Monitoring report ECS 3307 Dust June 2009

Bodies Informed, Date and Details:

EPA

Identified as a Result of:

B.N.M. Monitoring

Identified by: BNM

Date of Identification: / /

Action Plan:

No Action Plan as High Levels of Dust resulted from East of Site where lies the Main Road & Kilsaran Concrete Works and is attributable to external traffic.

Responsibility:

Target Date for Completion: / /

Actual Date of Completion: / /

Closed by (Signature and Title): Francis Fly

Date: 6/8/2009

Appendix IV

Accident Prevention & Emergency Response Procedure

Environmental Corrective & Preventive Action EP1.0	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Purpose:

To detail a procedure to address environmental corrective and preventive action

2.0 Scope:

Environmental non-conformance and environmental complaints at this site.

3.0 Responsibility:

Facility Manager or his/her deputy

4.0 References:

EPF 1.1 Corrective/Preventive Action Report Form
Corrective Action File
Waste Licence 131-02- Condition 2.2.2.5

5.0 Procedure:

5.1 On notification of an environmental non-conforming situation, or upon identification of a potential non-conformance, the Facility Manager will initiate and document the situation on a *Corrective/ Preventive Action Report Form (EPF1.1).*

5.2 The Facility Manager and/or his/her deputy assess all non-conformances and potential non-conformances and then relevant personnel are appointed to establish a corrective/preventive action plan. The detail and magnitude of the action plan shall be appropriate to the magnitude of the non-conformance and commensurate with the environmental impact encountered. When the corrective/preventive action plan has been agreed, it will be authorised, and those responsible for the implementation of the corrective/preventive action plan will promptly conduct their duties as described therein.

5.3 The *Corrective/Preventive Action Report Form (EPF1.1)* and any other relevant information and correspondence pertaining to the Corrective Action will be filed in a designated *Corrective Action File*.

5.4 The Facility Manager and/or his/her deputy will monitor the implementation of the corrective/preventive action plan. On successful completion, the Facility Manager and/or his/her deputy will verify that the corrective/preventive action plan has been completed and that corrective/preventive action is effective. The corrective/preventive action plan will then be closed off and filed in the *Corrective Action File*.

5.5 Environmental corrective/preventive action may be initiated as a result of audit findings and /or receipt of environmental complaints, environmental monitoring or emergency drills. If so, corrective/preventive action will be implemented and closed off as described above.

5.6 The Facility Manager and/or his/her deputy will review all open corrective/preventive action plans on a monthly basis to establish the status of each.

6.0 Responsibilities

The Facility Manager and/or his/her deputy are responsible for establishing, with the relevant personnel a corrective/preventive action form to address potential and actual non-conforming situations. He/she shall review progress on a corrective action plan on a monthly basis and maintain the *Corrective Action File*.

Environmental Corrective & Preventive Action EPF1.1	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

ENVIRONMENTAL CORRECTIVE/PREVENTIVE ACTION REPORT FORM

Reference Number		**Date: / /**		**Initiator**	
Nature of Non-Compliance?	**Actual / Potential**		**Description of Non-Compliance:**		
Identified as a Result of:					
Date of Identification: / /		**Identified By:**			
Agencies/Bodies Informed, Date and Details:					
Action Plan:					
Responsibility:					
Target Date for Completion: / /			**Actual Date of Completion: / /**		
Closed by:			**Date: / /**		

1.0 Purpose:

To detail the appropriate response to an Environmental Incident at this site.

2.0 Scope:

Environmental accidents/emergencies at this site.

3.0 Responsibility:

Facility Manager and/or his/her deputy.

4.0 References:

EP 1.0 Environmental Corrective and Preventive Action
EPF 1.1 Environmental Corrective Action Report Form
EPF 2.1 Environmental Incident Investigation Report Form
EPF 2.2 Environmental Notification Form
Waste Licence 131-02

5.0 Procedure:

5.1 All environmental incidents must be reported to the Facility Manager as soon as they occur.

5.2 The Facility Manager will perform an immediate initial assessment of the incident. This assessment will determine the significance of the incident and whether corrective action must be taken *(EP1.0- Environmental Corrective and Preventive Action).* Findings of this assessment are recorded on the *Environmental Incident Investigation Report Form (EPF 2.1).*

5.3 The Facility Manager or his/her deputy, with reference to *(EP 1.0) Environmental Corrective and Preventive Action* will instigate any appropriate *Environmental Corrective/Preventive Action (EP1.0)* to eliminate or minimise the environmental impact of the incident. This action will be executed by the Facility Manager, his/her deputy or by appointed suitably trained personnel. Any Corrective Action is detailed in the *Environmental Corrective and Preventive Action Report Form*

(EPF1.1) and referenced in the *Environmental Incident Investigation Report Form (EPF2.1*).

5.4 Where deemed necessary by the Facility Manager or his/her deputy, and with due reference to Conditions of *Waste Licence 131-02*, the relevant bodies will be informed immediately of the non-conformance and associated corrective action. The *Environmental Notification Form (EPF2.2)* shall be completed at this stage.

5.5 Where the incident results in a significant environmental impact, an Environmental Programme will be established to eliminate or minimise the impact.

5.6 The Facility Manager shall provide a proposal to the relevant authority for its agreement within one month to develop a preventive plan to avoid reoccurrence of the incident and to put in place any other appropriate remedial action.

Environmental Incident & Reporting Form EPF 2.1	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

ENVIRONMENTAL INCIDENT INVESTIGATION REPORT FORM

Report No.		**Date and Time Recorded:**	**/ / : am/pm**	**Date& Time Received**	/ / : am/pm
Nature of Incident					
Cause of Incident					
Environmental Significance of Incident					
Personnel Involved/Affected					
Statutory Bodies Informed and Details					
Consequences of Incident					
Corrective Action Required	**YES / NO**		**Corrective Action Report No.**		
Signed			**Date**		

Environmental Notification Form EPF 2.2	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

ENVIRONMENTAL NOTIFICATION FORM

Company Name:		**Facility:**		**Phone No:**		**Fax No:**		**Contact Person:**	
Location of Incident									
Date and Time of Incident:	**/ / : am/pm**			**Duration of Incident:**					
Nature of Incident:									
Source of Incident:						**Has source been isolated?**			
Cause of Incident:									
Environmental Significance of Incident									
Corrective Action Taken?	**YES / NO**	**Corrective Action Report No.**		**Environmental Incident Investigation Report From No.**					
Emergency Services Contacted?									
Details of Other Bodies Contacted:									
Signed									

Purpose:

1.0 To detail a procedure for the acceptance and handling of waste at Midland Waste Disposal Ltd.

2.0 Scope:

All waste accepted at Midland Waste Disposal Ltd. transfer station for subsequent recovery or disposal is in accordance with licence Reg. no. 131-02.

3.0 Procedure:

3.1 Waste handling operations at this site are in accordance with hours of operation as detailed in the licence Reg. no. 131-02. At all other times other than Bank Holiday weekends, all waste for disposal shall be removed from the facility within 48 hours of its arrival on-site; at Bank holiday weekends such waste should be removed from the facility within 72 hours of its arrival on-site.

3.1.2 The current waste acceptance procedure involves the use of an Integrated Waste Software System. This software is linked to the on-site weighbridge and is used for recording the quantities of waste accepted on-site. All incoming waste is transferred by Midland Waste Disposal Ltd. company vehicles or authorised third party haulage companies and reported on the weight docket and environmental procedure form *Waste movement Report-Incoming*. Upon entry to the site, waste is weighed at the entrance weighbridge and the vehicle registration number is entered into the system. An individual weigh docket is printed for each waste load. All weigh dockets are filed by an office staff member in the *Weight Docket File*.

3.1.3 After weighing, each waste load is brought to the enclosed Recycle Plant Building, where it is deposited on the floor for visual inspection. Visual inspections are necessary to ensure that all wastes comply with the requirements of the *Waste Licence No. 131-02*.
The Waste Segregation Manager is responsible for carrying out the waste visual inspections and for maintaining a written record of all inspections. Written records of these waste inspections will be conducted each working day on the waste inspection form *Incoming Waste Inspection Audit Sheet,* which is generated through the waste software system. Only after visual inspection can the waste be processed for disposal or recovery.

3.2 Municipal Household Waste

3.2.1 Municipal household waste, which is accepted at this site, is directed through the facility prior to delivery to licensed Landfill Facility utilising Midland Waste Disposal Ltd. vehicles or third party haulers. Details of Landfill Facilities and third party haulers can be found in Tables A and B of *EPF 3.1 Waste Recycling Routes and Disposal Destinations*.

3.2.2 The processing of recyclable household material and of commercial and industrial recyclable material is detailed in section 3.4 below.

3.3 Hazardous Waste

3.3.1 Midland Waste Disposal Ltd. Navan is licensed to accept hazardous household waste on-site in the form of batteries and fluorescent tubing that are inadvertently accepted on–site are segregated, before being collected and recovered by a licensed contractor. Batteries and fluorescent tubes are stored in enclosed, bunded, non-corrosive receptacles inside the recycling plant building, in the Waste Quarantine Area, pending transport off-site for recovery. Details of collectors can be found in *Table B Third Party Haulers EPF 3.1*.

3.3.2 Upon collection of the hazardous waste (batteries and fluorescent tubes), each waste contractor provides a *Consignment Note (C1 Form)*, which is required to move the hazardous waste within the State (if a waste contractor does not provide a C1 form, it may be obtained from the Local Authority). The C1 Form is a 3-part document (A, B & C) and comprises of 5 numbered copies. Before transferring the waste to the carrier, a Midland Waste representative must complete Part A on 5 copies of the C1 Form when accepting the waste, the waste contractor must complete part B of the form. This is witnessed by a Midland Waste representative, who, then gives the top 4 copies of the form to the carrier and retains the remaining copy. Midland Waste files the C1 Forms for a period of 5 years. A certificate of disposal is also received from the waste contractor, when the hazardous waste has reached its final destination. Midland Waste Disposal Ltd. Navan files the completed C1 Forms with the Certificates of Disposal in the Waste Management File in the General Manager's office.

3.3.3 Household hazardous waste inadvertently collected is placed in the quarantine area and disposed at a licenced facility. See document *EPF 3.1 Table B* for details of disposal/recovery facilities.

3.3.4 Any other wastes which are deemed to be in contravention of the waste licence and/or unsuitable for recovery or disposal are contained within the Waste Quarantine Area, as per the Unacceptable Waste handling procedure, *EP 5.0*. This waste is removed from the facility and transferred to an appropriate authorised facility for recovery or disposal.

3.4 Recyclable Material

3.4.1 When all hazardous material has been removed, the remaining waste material is examined for recycling potential and is deemed suitable for recycling/recovery or segregated for final authorised disposal based on the level of contamination.

3.4.2 Materials commonly accepted for recycling include cardboard/newsprint, timber, construction & demolition waste, glass, plastics, metals, green waste and mixed household recyclables. Recovered recycled materials are directed to the appropriate waste facility as listed in *EPF 3.1 Table C*.

3.4.3 Cardboard/Paper and newsprint is sorted, separated and delivered to AES Tullamore for further treatment. Details of the quantities recovered are generated by the Integrated Waste Management system and filed in the General Manager office (See tables for A & B for further contact details of final destinations used).

3.4.4 Timber is segregated on-site for recovery and bulk transferred to authorised sites. Details of the quantities of timber recovered are generated by the IWS system and these records are filed in the waste management file in the General Manager office.

3.4.5 Glass is accepted in recycling storage containers and upon recovery is delivered to authorised sites for onwards recycling. Details of quantities of glass recovered are generated by the computerised IWS system and these records are filed in the Waste Management File in the General Managers office.

3.4.6 Recovered plastic waste is forwarded to authorised sites for further recycling. Details of the quantities recovered are generated by the computerised IWS system and these records are filed in the Waste Management File in the General Managers office.

3.4.7 Clean construction and demolition waste and clean topsoil is accepted at this facility. Recyclable materials such as the timber and metal fractions are segregated and removed for onwards recycling and the remaining C& D waste is directed to authorised sites for land reclamation. Metal waste is delivered to authorised waste recovery facilities for onwards recycling. Plasterboard waste is accepted at the site. It is segregated and transferred to authorised waste recovery facilities for onward recycling. Details of the quantities recovered are generated by the computerised IWS system and these records are filed in the Waste Management File in the General Managers office.

3.4.8 Empty gas cylinders, which are inadvertently accepted at the Midland Waste Disposal Ltd. Navan site in household and commercial skips. The empty gas cylinders are segregated and stored in a dedicated skip in the waste quarantine area. The empty gas cylinders are collected and taken off-site by the local Fuel Merchants. Details of the quantities recovered are generated by the computerised IWS system and these records are filed in the Waste Management File in the General Managers office.

3.4.9 Pre-sorted dry recyclable kerbside municipal waste is accepted at this facility through the blue recyclable bin system. This waste includes newspaper, Aluminium Cans, Plastic bottles, Magazines, Steel cans, Cardboard Packaging and Tetra-pak. The dry recyclable material is deposited on the floor of the visual Inspection area where it is sorted and segregated and baled for further recycling. The material is delivered to the following authorised recovery facilities:

AES Tullamore.

3.5 Residual Waste Material

All waste not deemed suitable for recycling/ recovery is loaded into designated containers. These containers are subsequently transported for authorised disposal to landfill. Details of approved Landfill sites are listed in *EPF 3.1 Table A*. All waste being transported from the facility is weighed on the computerized weighbridge. An individual weight docket is printed for each waste load. All weight dockets are filed in the *Waste Management File* and are held in the office.

4.0 Responsibilities

The Facility Manager is responsible for establishing, with the relevant personnel, a suitable procedure for accepting and handling waste at the facility. He/she must ensure that all personnel involved in waste handling are made aware of this procedure and are given adequate training. The Facility Manager is also responsible for ensuring that detailed records of each load of waste arriving at and departing from the facility are being maintained.

5.0 Reference:

EPF 3.1: Waste Recycling routes and disposal destinations.
EP 4.0: Hazardous Waste Consignment Note (C1 Forms) Procedure.
EP 5.0: Unacceptable Waste Handling procedure.

Waste Recycling Routes and Disposal Destinations EP 3.1	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

1. Purpose:

To detail the waste recycling routes and disposal destinations for all waste materials accepted at this site.

2. Scope:

All waste accepted at this site and all transfer, recovery or disposal destinations utilised.

3. Procedure:

This procedure is comprised of a number of tables that list all transfer, recovery and disposal destinations utilised by Midland Waste Disposal Ltd. It also includes a list of authorised third haulers used to transport waste material. Tables included in this procedure are:

Table A: Landfill Facilities
Table B: Third Party Haulers
Table C: Recycled/Recovered Material Destinations. Including: Glass, Metal, C &D, Timber, and Dry Recyclables.

4. Tables:

Waste Recycling Route & Destinations EPF 3.1	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Table A Landfill Facilities

Name	Address	Address	Licence No.	Waste Types
Kyletalesha Landfill	Clonsoughy	Kyleclonhobert, Co. Laois	EPA 26-2	Household, Commercial, Industrial Non-Hazardous Solids, Sewage Sludge, C & D
Derryclure Landfill	Derryclure	Portlaoise, Co. Offaly	EPA 29-2	Household, Commercial, Industrial Non-Hazardous Solids, Treated Sewage Sludge, C & D
Drehid Waste Management Facility	Killinagh Upper	Carbury, Co. Kildare	EPA 201-1	As per waste licence
Ballydonagh Landfill	Ballydonagh	Dublin Road, Athlone, Co. Westmeath	EPA 28-2	Commercial, C & D, Industrial Non-Hazardous Solids, Dewatered Industrial Non-Hazardous Sludges/Filtercakes, Construction Materials Containing Asbestos
Ballaghveny Landfill	Ballymackey	Nenagh. Co. Tipperary	EPA 78-2	As per waste licence
Sillot Hill	Brownstown	Co. Kildare	14-1	As per waste licence
Knockharley Landfill	Knockharley	Kentstown, Co. Meath	146-1	As per waste licence
Whiteriver	Whiteriver and Gunstown Townland	Dunleer, Co. Louth	EPA60	As per waste licence

Waste Recycling Route & Destinations **EPF 3.1**	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Table B:		**Third Party Haulers**			
Name	**Address**	**Address**	**Address**	**Licence / Permit No.**	
M & J Recycling Services Ltd	Sandhill	St. Margarets,	Co. Dublin	182/OY/131/04	All Non-Hazardous Wastes
MSM Recycling	Mountmellick	Co. Laois		049/OY/44/02	As per waste collection permit
KMK Recycling Ltd	Tullamore	Co. Offaly		085/OY/17/02	As per waste collection permit
Creagh Transport	Old mines Industrial Est.	Silvermines	Co. Tipperary	231/OY/189/04	All non-hazardous Wastes
Irish Lamp Recycling	Athy	Co. Kildare		035/OY/80/03	As per waste collection permit
Atlas Environmental Ltd.	Portlaoise	Co. Laois		033/OY/18/02	As per waste collection permit
Returnabatt	Kill	Co. Kildare		067/OY/11/02	As per waste collection permit
Drumfries Freight	179 Gosford Rd., Newry	Co. Down	BT35 6NQ	248/OY/191/05	As per waste collection permit
Digby Bridge Sand & Gravel	Sallins	Co. Kildare		WCP/Ke/035c/02b	As per waste collection permit
Barry Reilly Transport	Killallen	Co. Meath		WCP MH-2007-81-B	As per waste collection permit
Damien Fitzsimons Transport	Ardsallagh	Navan	Co. Meath	WCP MH/2002/08C	As per waste collection permit

Waste Recycling Route & Destinations **EPF 3.1**	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Table C:		**Recycled/Recovered Material Destinations**				
Name	**Address**	**Address**	**Address**	**Facility Type**	**Licence / Permit No.**	**Waste Types**
AES Tullamore	Cappincur	Tullamore	Co. Offaly	Waste Transfer & Material Recovery Facility	104-1	As per waste licence
Midland Waste Disposal	Clonmagadden	Navan	Co. Meath	Waste Transfer & Material Recovery Facility	131-2	As per waste licence
AES Nenagh	Springfort Cross	Nenagh	Co. Tipperary	Waste Transfer Station	WP/TN/112	As per waste permit
Ormonde Recycling	Unit 15/16 Hebron Industrial Estate	Hebron Road	Kilkenny	Waste Transfer Station	WMP22/2005	As per waste permit
Hammond Lane Metal Co. Ltd.	Garrycastle	Athlone	Co. Westmeath	Recycling/Recovery/Storage	WP 62-2004	Metal
Smurfit Recycling	Lower Ballymount Rd	Walkinstown	Dublin 12	Cardboard and Paper Recycling Facility	WPR 021/3	Cardboard and Paper
Bailey Waste Recycling	Rosemount Park	Ballycoolin Road	Dublin 11	Cardboard and Paper Recycling Facility	WPT / 94	Cardboard and Paper
MSM Recycling	Harbour Street	Mountmellick	Co. Laois	Glass Recycling Facility	WMP005D	Glass
A1 Metal Recycling	Acragar	Mountmellick	Co. Laois	Metal Recycling Facility	WMP007d	Metal
KMK Metals Recycling Ltd.,	Cappincur Industrial Est.	Daingean Road	Portlaoise, Co. Offaly	Waste Transfer Station	EPA 113-02	Metal
Baileys Waste Recycling	Unit 14a Greenogue Bus. Pk.	Rathcoole	Co. Dublin	Waste Transfer Station	WPR 029	timber
Cara Group ltd	Parkveiw House	Beechhill	Clonskeagh, Dublin 4	Waste Transfer Station	185-1	Hazardous Waste
Mulleadys Ltd.	Cloonaugh	Drumlish	Co. Longford	Waste Transfer Station	W0169-01	As per waste licence
Retech	Drumman, Cavan Road	Cootehill	Co. Cavan	Waste Facility	07/04	As per waste licence
Goff Recycling Ltd.	Kilrane	Rosslare Harbour	Co. Wexford	Waste Transfer Station	W0229-01	As per waste licence

Waste Recycling Route & Destinations EPF 3.1	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Table C: Continued **Recycled/Recovered Material Destinations**

Name	Address	Address	Address	Facility Type	Licence / Permit No.	Waste Types
Irish Lamp recycling Company Ltd	Woodstock Industrial Estate	Kilkenny road	Athy, Co. Kildare	Waste Facility	WMP 02/2000/b	Fluorescent tubes
Atlas Environmental Ltd	Clonminam Industrial Est.	Portlaoise	Co Laois	Waste Facility	EPA 184	Oil
FINSA Forest Products	Scarrif	Co. Clare		IPC facility	IPC-22-2	Timber
Thornton's Recycling Centre	Kileen rd	Ballyfermot	Dublin 10	Waste Transfer Station	EPA 44-2	As per waste licence
Thornton's Recycling Centre	Ballynadrumny	Co. kildare		Waste Transfer Station	EPA 179	As per waste licence
Glassco Recycling	Oldmill Industrial Est.	Old Mill	Kill, Co. Kildare	Waste Transfer Station	160/2004	As per waste licence
Gypsum Recycling (Ireland) Ltd. T/A Recycled Products Ltd.	Avondale, Platin Rd.,	Bryanstown	Co. Meath	Waste Facility	WMP2004/38	Gypsum 17 08 02
Techrec Ireland Ltd.	Unit 51, Park West Industrial Estate	Nangor Road	Dublin 12	Waste Facility	W0233-01	As per waste licence
Returnabatt	Kill	Co. Kildare		Waste Transfer Station	97/2003	Batteries
SFL Krystelline	Callan,	Co. Kilkenny		Waste Permitted Site	11/2003	Glass
AES Portlaoise	Kyletalesha	Portlaoise	Co. Laois	Waste Transfer Station	194-02	As per waste licnece
Greenclean	Blakes Cross	Lusk	Co. Dublin	Waste Facility	W0222-01	As per waste licence
Failand Paper Services	11 Triangle South	Clifton	Bristol UK BS8 1EY	Cardboard/Paper Recycling Facility	IRE/G010/08	Cardboard/Paper
Panda Waste	Rathdrinagh	Beauparc	Co. Meath	Waste Facility	EPA140	As per waste licence
Leinster Environmentals	Clermont Park	Haggardstown, Dundalk	Co. Louth	Waste Facility	WP 2004/30	As per waste licence
International Recycling	Heath House, 5 Woolgate Court	St. Benedicts Street	Norwich NR2 4AP	Waste Facility	A826041671	As per waste licence
Doherty Quarries & Waste Management Ltd.	Cruicetown	Slane	Co. Meath	Waste Facility	WMP 2001/34	As per waste licence

Waste Recycling Route & Destinations EPF 3.1	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Table C: Continued **Recycled/Recovered Material Destinations**

Name	Address	Address	Address	Facility Type	Licence/Permit No.	Waste Types
Gorden Bennett	Kingstown	Navan	Co. Meath	Waste Facility	WMP2005/48	As per waste licence
Crumb Rubber Ireland Ltd.	Dromiskin	Dundalk	Co. Louth	Waste Facility	WP2007/01	As per waste permit
Premier Waste	Turnpike Road	Ballymount	Dublin 22	Waste Facility	WPR070	As per waste licence
Wilton Waste	Kiffa	Crosserlaough	Co. Cavan	Waste Facility	WCP MH/08/0057/01	As per waste licence
Clearway	41 Dobbin Road	Portadown	Co. Armagh	Waste Facility		As per waste licence
Bord na Mona Kilberry	Kilberry	Athy	Co. Kildare	Waste Facility	W0198-1	As per waste licence
Murphy Environmental	Gormanston	Co. Meath		Waste Facility	W0151-01	As per waste licence

1.0 Purpose:

To detail a procedure for the completion of Hazardous Waste Consignment Note (C1 Forms).

2.0 Scope:

All hazardous waste inadvertently accepted at this site.

3.0 Procedure:

3.1 Upon collection of the hazardous waste (batteries and fluorescent tubes), each waste contractor provides a Consignment Note (C1 Form) which is required to move the hazardous waste within the State. (If the waste contractor does not provide a C1 Form, it may be obtained from the Local Authority).

3.2 The C1 Form is a 3 part document (A, B & C) comprised of 5 numbered copies. Before transferring the waste to the carrier, Midland Waste Disposal Ltd. representative must complete Part A on 5 copies of the C1 Form.

3.3 When accepting the waste, the waste contractor must complete part B of the form. This is witnessed by the Midland Waste Disposal Ltd. representative, who, then gives the top 4 copies of the form to the carrier and retains the remaining copy.

3.4 Midland Waste Disposal Ltd. maintain the C1 Forms for a period of 5 years. A Certificate of Disposal is also received from the waste contractor, when the hazardous waste has reached its final destination.

3.5 Midland Waste Disposal Ltd. files the completed C1 Forms with the Certificates of Disposal in the Waste Management File in the General Manager's office.

4.0 Responsibilities

The Facility Manager is responsible for establishing, with the relevant personnel, a suitable procedure for accepting and handling waste at the facility. He/she must ensure that all personnel involved in waste handling are made aware of this procedure and are given adequate training. The Facility Manager is also responsible for ensuring that detailed records of each load of waste arriving at and departing from the facility are being maintained.

1.0 **Purpose:**

To detail a procedure for the management of unacceptable wastes received at this site.

2.0 Scope:

Unacceptable wastes received at this site.

3.0 Responsibility

Facility Manager or his/her deputy

4.0 Reference

EP 3.0 Procedure for Waste Acceptance and Handling

5.0 Procedure:

5.1 Waste accepted at the facility is visually inspected as it is deposited on the floor of the Recycle Plant Building. Visual inspection of waste is the responsibility of the Segregation Manager, as per the *Waste Acceptance and Handling Procedure EP 3.0*. Upon receipt of any wastes, which are deemed to be in contravention of the waste licence and/or are unsuitable for recovery or disposal, the Facility Manager shall be informed.

5.2 Unacceptable waste types include the following:

Sewage sludge	Waste oil	Oil filters
Industrial non-hazardous liquids and sludge	Infectious healthcare waste	Oil/sand mixtures or mixture of oil and other absorbent material
Pharmaceutical waste	Cytotoxic waste	Paint and ink
Solvents	Specified risk material	Photographic processing waste
Contaminated rubble, soil	asbestos	

5.3 The unacceptable waste will be segregated and contained within the Waste Quarantine Area on the facility. This waste shall be removed from the facility as soon as possible and returned to source. When this is not feasible, such unacceptable wastes will be held on site until such time as a suitably qualified contractor can be sourced to allow the waste to be transferred to an appropriate alternative facility for recovery or disposal.

5.4 A written record of all unacceptable wastes will be maintained on the *Unacceptable Wastes Logsheet EPF 5.1*. Completed *EPF 5.1* logsheets are filed in the Waste Management File in the Facility Manager's office.

6.0 Responsibilities

The Facility Manager is responsible for establishing, with the relevant personnel, a suitable procedure for managing unacceptable wastes at the Navan facility. He/she must ensure that all personnel involved in waste handling are made aware of this procedure and are given adequate training. The Facility Manager is also responsible for ensuring that detailed records are being maintained.

The Facility Manager must notify and forward copies of completed forms to the Environmental Manager.

Unacceptable Waste Handling Form **EPF 5.1**	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Reference Number		**Date: / /** **Time:**	**Identified By:** **Photograph Taken:** Tick box ☐ **Yes** ☐ **No**
Waste Type			
Quantity			
Source			
Disposal Requirements			
Disposal Destination (including waste permit/licence number)			**Cost:**
Collected/Transported By: (including waste collection permit number)			**Cost:**
EPA/Co. Co. Notified	**YES / NO**	**Details:**	
Disposal Date: / /		**Disposal Record on File: YES / NO**	
Signed off By:		**Date: / /**	

DEVELOPING AND IMPLEMENTATING A TRAINING AND AWARENESS PLAN

1.0 Purpose:

This procedure has been drafted to outline the methodology to be adhered to regarding the development and implementation of a training and awareness programme at Midland Waste Disposal Ltd. Navan

2.0 Scope:

This procedure shall incorporate the training requirements of all staff at Midland Waste Disposal Ltd. Navan

3.0 Responsibility:

The Facility Manager

4.0 References:

EPF 6.1 Compulsory Environmental Training Form
EPF 6.2. Environmental Training Record
Waste Licence 131-02
Internal Communication File

6.0 Procedure:

6.1 Environmental Induction Programme

On assuming a position with Midland Waste Disposal Ltd., should the role of the position have the potential to have an effect on the environment, the new staff member shall undergo an environmental induction programme. The Facility Manager shall present this induction programme and it is his/her responsibility in ensuring that all relevant newly appointed staff members attend the aforementioned programme.

The induction programme shall include, at a minimum a description of the following:

- Environmental Management System at Midland Waste Disposal Ltd;
- Waste Licence and the Environmental Protection Agency;
- Waste Acceptance and Handling Procedure (EP3.0);
- Unacceptable Waste Handling (EP5.0);
- Potential Impact of inductee's activities on the environment;
- Emergency Response Procedures, ERP 1.0 to ERP 6.0;
- Sources of Environmental Information pertaining to site activities.

6.2 Training

6.2.1 The Facility Manager shall request all relevant staff members to undertake training in any new environmental procedure adopted by Midland Waste Disposal Ltd. and any new amendments to existing environmental procedures. The Facility Manager shall file a compulsory *Environmental Training Form (EPF 6.1)* and place these on display on the designated environmental notice board.

6.2.2 The Facility Manager in conjunction with the Environmental Manager shall review on an annual basis the need for revised induction programmes for all staff members, compiling all new environmental procedures and amended environmental procedures in place at Midland Waste Disposal Ltd. Records of these meetings shall be kept on file by the Environmental Manager.

6.2.3 A Training Record shall be initiated for each member of staff on commencement of employment and maintained within the *Environmental Training Folde*r. As a

training session is completed all members of staff present shall acknowledge this by signing their designated Training File.

6.3 Awareness

6.3.1 The Facility Manager or his/her deputy is responsible for ensuring awareness of all staff of the environmental obligations that Midland Waste Disposal Ltd. are required to adhere to.

6.3.2 The Facility Manager or his/her deputy is responsible for ensuring that selected environmental information is displayed on the designated environmental notice board.

6.3.3 A copy of all information placed on the environmental notice board or handed out to staff is stored in the *Internal Environmental Communication File* by the Facility Manager and/or his/her deputy. All staff shall be advised concerning the availability of all information pertaining to *Waste License 131-02* for inspection.

Compulsory Environmental Training EPF 6.1	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number:	
Effective Date: 01/01/2009	

COMPULSORY ENVIRONMENTAL TRAINING

Training No.	Date and Time Issued	/ / : am/pm	
Staff Names/Job Titles:			
Details of Environmental Training			
Training Provider Internal/External			
Duration of Training			
Projected Cost			
Issued By		**Signature of Facility Manager**	**Date**

Environmental Training and Awareness Procedure EPF 6.2	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray Approved By: Linda Cahill Revision Number: 3 Effective Date: 01/01/2009	Midland Waste Disposal Ltd

ENVIRONMENTAL TRAINING RECORD

Employee Name:			**Position:**		
Date	**Type of Training Internal/External**	**Description of Training**	**Signature of Trainer**	**Signature of Trainee**	**Certificate Received Yes/No**

Environmental Complaints EP 7.0	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

1.0 Purpose:

To ensure all environmental complaints are dealt with effectively.

2.0 Scope:

External and internal environmental complaints pertaining to this site.

3.0 Responsibilities:

Facility Manager or and/or his/her deputy. All employees are responsible for communicating any complaints identified on-site or off-site to the Facility Manager regardless of how minor it appears or what format it assumes.

4.0 References:

EP 1.0 Environmental Corrective and Preventive Action
EP 2.0 Environmental Incident and reporting procedure
Environmental Complaints Register
EP 7.1 Environmental Complaints Assessment Form
EPF 1.1 Corrective/Preventive Action Form.
Waste License 131-02

5.0 Procedure:

5.1 All environmental complaints with regard to on site activities of the company are recorded, investigated and actioned if deemed feasible.

5.2 The Facility Manager will ensure that all environmental complaints written and verbal, from internal and external sources, are recorded on an *Environmental Complaints Assessment Form (EP 7.1).*

5.3 The complaints form will be processed by the Facility Manager with any further relevant documentation attached.

5.4 Each complaint form will be completed with information detailing the name and address of the complainant, when known, and the time and date of the receipt of the complaint. The complaint form will also contain a reference number and detail the nature of the complaint including the time and date of the incident.

5.5 The Facility Manager will investigate each complaint and record the results of the investigation on the *Environmental Complaints Assessment Form (EPF 3.1).* The results will indicate whether the complaint is valid, the cause of the complaint, and whether corrective action is required. If corrective action is required, the Facility Manager will initiate corrective action as per the *Corrective/Preventive Action procedure (EP 1.0)* and *Environmental Incident and Reporting Procedure (EP 2.0).*

5.6 The Facility Manager, will notify all complainants of the result of the investigation and any associated corrective action, where possible. The *Complaints Assessment Form (EPF 3.1)* will detail the date that information was sent to complainants and authorised by the signature of the Facility Manager.

6. All completed forms are placed within a register of environmental complaints and maintained on file by the Facility Manager. This Register will also include a summary list of filed forms.

Environmental Complaints **EP 7.1**	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Complaint No.		**Date & Time Received**	/ / : Am/pm	**Initial Investigation and Action**			
Name:		**Communication:**					
Address:		**Phone**					
		Fax					
		Letter					
Phone No:		**Verbal**					
Fax No:		**Other**		**Signed:**		**Date:**	/ /
Description of Complaint				**Corrective Action Summary**		**CA #:**	
				Signed:		**Date:**	
				Complaint Resolution Summary			
Incident First Noted	Date: / / Time: : am/pm						
Complaint Passed To:							
Date:	/ /			**Signed:**		**Date:**	
Complaint Valid?	YES / NO			**Complainant Notified?**	YES / No	Date:	/ /
Immediate Action Required?	YES / NO			**Complaint Closed By:**			
Further Corrective Action Rqd?	YES / NO			**Date:**	/ /		

Procedure for the Processing of Enquiries with regard to Environmental Performance On-Site

1.0 Purpose:

The purpose of this procedure is to install a programme to ensure that members of the public can obtain information concerning the environmental performance of at this site at all reasonable times (Condition 2.2.2.7 Waste Licence 131-02).

2.0 Scope:

The scope of this procedure is all activities conducted on-site in accordance with *Waste Licence 131-02* and general environmental performance on-site.

3.0 Procedure:

3.1 All calls regarding the environmental performance of the plant are directed to the Facility Manager.

3.2 All enquiries regarding environmental performance are logged on the *Environmental Request for Information Form (EPF 8.1).* This form shall include at a minimum;
(a) Date of enquiry
(b) Time of Enquiry
(c) Name of enquirer
(d) Nature of enquiry
(e) Record of request for site visit
(f) Record of request for site tour
(g) Record of request access to documentation
(h) Signature of receiver of enquiry

3.3 The site manager shall with all due expedience make available information on the public file.

3.4 The public file shall contain;
(a) Annual Environmental Report
(b) Monthly Compliance Reports
(c) EPA correspondence

(d) Environmental Schedule of Objectives and Targets.

3.5 All site tours associated with an enquiry will be scheduled within one working week on receipt of request. In exceptional circumstances it may be arranged at shorter notice.

3.6 On arrival at the plant the visitor(s) will be greeted at reception and asked to sign. All relevant personnel will be contacted with regard to the arrival on-site. These personnel will include at a minimum either the General Manager or the Operational Manager.

3.7 Each visitor shall be signed. Should a site tour not be requested the visitor(s) shall be provided the opportunity to review the public file in an office on their own. The member of staff guiding the tour wills direct the participant (s) to the fire muster point for the eventuality of a fire evacuation being necessary.

3.8 The member of staff guiding the tour will distribute high visibility clothing and safety glasses to the visitors(s).

3.9 At all times the visitor(s) will be accompanied by a member of staff for Health & Safety purpose and also to answer any queries that may arise. Following the completion of the site tour, the visitor will be provided with the opportunity to review the public file in an office on his or her own.

3.9.1 On completion of the review of the public file the visitor (s) will have the opportunity to discuss any queries with the General Manager or Operational Manager. The visitor (s) may also log a complaint at this stage if they require so. Subject to a complaint being logged an Environmental Complaints Procedure will be implemented by the General Manager.

3.9.2 If the visitor(s) is satisfied on completion of the site visit process, they shall complete an Environmental Site Visit Registration Form (*EPF 8.2*).

4.0 Responsibility:

The Facility Manager or other responsible person authorised by the Facility Manager is responsible for the implementation of the above procedure.

5.0 Relevant Documentation:

Environmental Request for Information Form (EPF 8.1)
Environmental Site Visit Registration Form (EPF 8.2)
Environmental Complaints Procedure (EP 7.0)
Environmental Complaints Assessment Form (EP 7.1)
Environmental Corrective & Preventive Action Procedure (EP 1.0)

Environmental Request for Information Form **EPF 8.1**	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Request for Information No:			**Date: / /**	**Time: :**
Name:		**Communication**	**Nature of Reply:**	
Address:		**Phone**		
		Letter		
		Fax		
		Verbal	**Communication Attached:**	
		Other	**Date of Reply:**	
Phone No:	**Fax Number:**		**Reply By:**	
Detail of Request for Information:			**Site visit Requested**	
			Proposed Date:	
			Area to be Visited:	
			Information examined by visitor:	
			Visitor Comments:	
Signed Signature of Company Representative:				
Date:			**Signature of visitor:**	
Received by:			**Date:**	

Environmental Communication (Internal and External) EPF 8.2	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray Approved By: Linda Cahill Revision Number: 3 Effective Date: 01/01/2009	Midland Waste Disposal Ltd

Environmental Request for Information Form (EPF9.1)

Report No.		**Date and Time Recorded:**	**/ / : am/pm**	**Date and Time Visit**	/ / : am/pm
Name of Visitors					
Details					
Site Tour Details					
Documentation Inspected					
Complaint Logged					
Follow-up Action					
Signed			**Date**		

Environmental Communication (Internal and External) **EPF 8.2**	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

1.0 Purpose:

The purpose of this procedure is to review the *Environmental Management Programme* (EMP) and to update it annually to account for any changes to the facility infrastructure/management and yearly improvements resulting from the phased introduction of the objectives and targets programme.

2.0 Scope:

All operations shall be assessed and all practicable and feasible options for the use of cleaner technology and the reduction and minimisation of waste and emissions shall be reviewed.

3.0 Definitions:

3.1 Emissions:

Any discharges to the environment generated by activities at this site.

3.2 Targets:

Detailed performance requirement, quantified where practicable, applicable to the organization or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.

3.3 Objectives:

Overall environmental goal, arising from the environmental policy, that an organisation sets itself to achieve, and which is quantified where practicable.

3.4 Target Date:

The date or timeframe by which the ultimate target (aim or goal) will be achieved. Target dates may also be set for the completion of the objectives.

3.5 Person Responsible:

The employee(s) with the overall responsibility of ensuring that the targets and objectives are completed on schedule.

4.0 Programme Title:

	(EMP yr/#/review)
4.1 Emissions to Atmosphere	EMP 06/1/1
4.2 Emissions to Groundwaters	EMP 06/2/1
4.3 Natural Resources Used	EMP 06/3/1
4.4 Waste Produced	EMP 06/4/1
4.5 Recycling and Recovery of Waste	EMP 06/5/1
4.6 Site Operations and Waste Management Procedures	EMP 06/6/1

5.0 Procedure

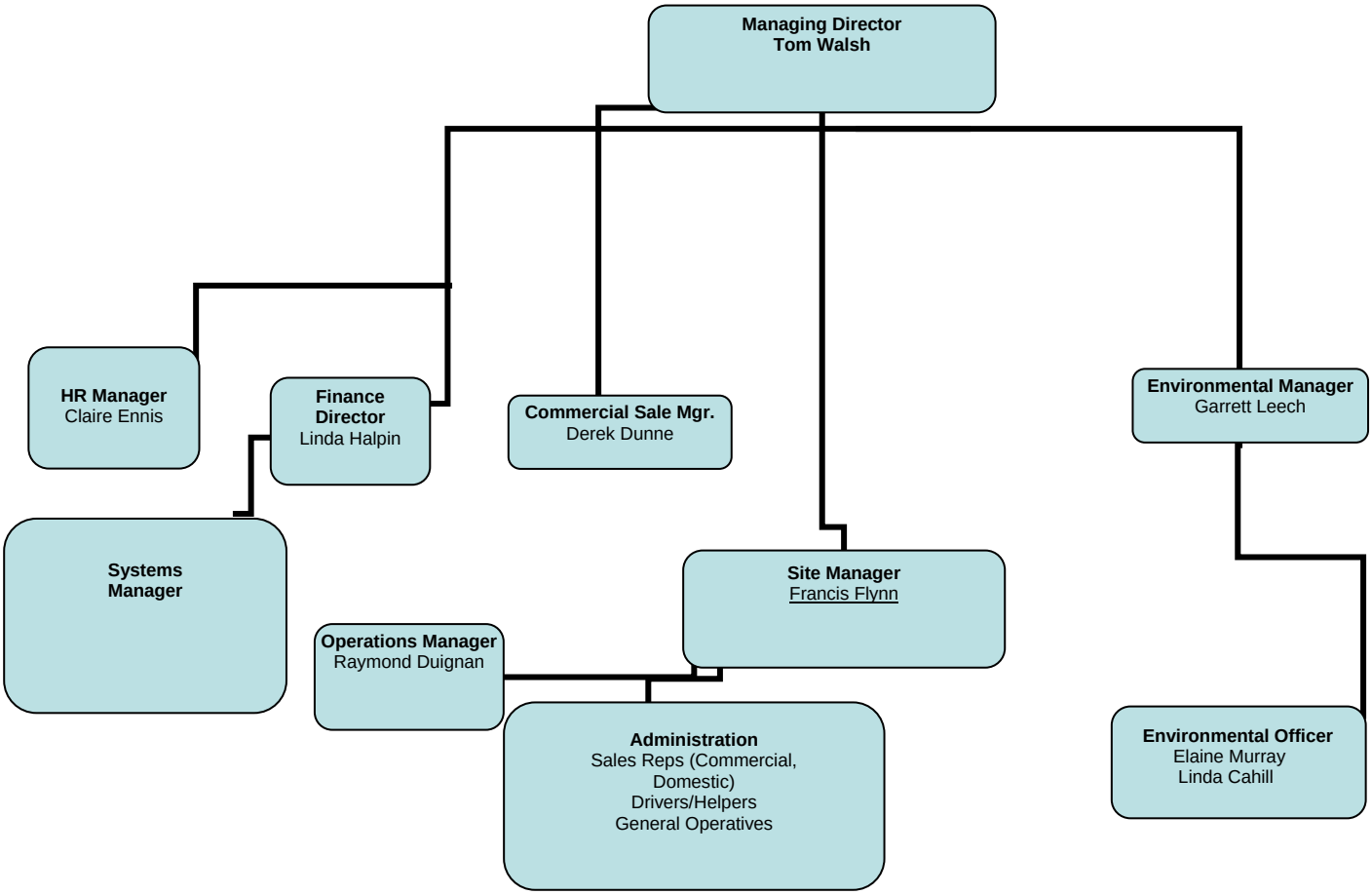
5.1 Monitoring Programme:

All discharges and emissions shall be monitored as specified in Schedule C of Waste Licence 131-02:
(1) Dust
(2) Noise
(3) Monitoring Emissions to Groundwater
(4) Monitoring of Surface Water Emissions
All waste accepted and handled at the facility shall be documented as per the *Waste Acceptance and Handling Procedure (EP 4.0)*.

5.2.1 On an annual basis and at any other time deemed necessary by the Facility Manager in consultation with Operations and Environmental Managers, forms EMPyy/1 to EMPyy/6 shall be checked for achievement of targets and completion of the objectives listed for the previous year.

5.2.2 If all targets have been achieved and objectives completed the form shall be signed off by the Facility Manager.

5.2.3 In the event of any objective not being achieved or any targets not completed, an explanation shall be appended to the form. The Facility Manager shall then sign the forms.


Managing Director
Tom Walsh
HR Manager
Claire Ennis
Finance Director
Linda Halpin
Commercial Sale Mgr.
Derek Dunne
Environmental Manager
Garrett Leech
Systems Manager
Site Manager
Francis Flynn
Operations Manager
Raymond Duignan
Administration
Sales Reps (Commercial, Domestic)
Drivers/Helpers
General Operatives
Environmental Officer
Elaine Murray
Linda Cahill

• AES Group Operations Manager

Name: Mr. Francis Flynn

Responsibility: Overall responsibility of the management of the site and maintenance of the license. Delegation of authority and responsibility to ensure the effective management of the facility. Health & Safety procedures at the site.

• Site Manager

Name: Mr. Francis Flynn

Responsibility: Management of operations as directed by the operations Manager including yard management.

Environmental & Health & Safety procedures at the site.

Day to day supervision of operations as directed by the Operations Manager and/or Managing Director & Environmental Team

Either the General Manager or Operations Manager or a suitably qualified deputy is present at the facility during all hours of operations.

• Operations Manager/ Waste Segregation Manager

Name: Mr. Raymond Duignan

Responsibility: Day to day running of the yard/ waste segregation operations at the site as directed by the General Manager.

• Environmental Team

Responsibility: Management of Waste license conditions in conjunction with Site Manager /Liaise with EPA, Document ting procedures on-site.

• **VCU Operator**

Name: Mr. Gunder Kippa

Responsibility: The management of the VCU unit, the daily running of the unit and maintaining of records.

• **Mechanic** Maintenance of machines and vehicles.

• **Vehicle Operators** Carry out daily operations as directed by the Site Manager.

• **Administrative Staff** Responsible for the day to day administration of the facility and accounts.

Daily/Weekly Site Inspection and Monitoring EWI 1.0	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

1.0 Purpose:

To detail the methodology to be followed when undertaking site drainage system inspections, bunds and interceptors inspections, daily litter inspections, weekly environmental nuisance inspections.

2.0 Scope:

Weekly inspection of site drainage system, bunds oil interceptors and spill kits, litter inspections, weekly environmental nuisance monitoring.

3.0 Procedure: Weekly Inspection of site drainage system, bunds, oil interceptors and spill kits.

3.1 On a weekly basis the following areas should be inspected for the purpose of this procedure;

- Surface Water Line – including all rain gulleys, silt trap and oil interceptor.
- Open Drainage Line from leachate catchment area including Waste water holding chamber
- Drainage from Diesel Filling Area
- Drainage from Truck Wash Area
- Diesel Tank Bund
- Spill Kits

A record of inspections should be maintained on the Environmental Work Instruction – *Weekly Drainage System, Bunds, and Oil Interceptors Inspection Form (EWF 1.1)*

3.2 A general visual inspection should be conduction on all areas detailed above by the Facility Manager or designee. This visual inspection should note on the inspection forms any blockages, overflows or presence of any liquid or solid matter within the area of inspection which should not be present.

3.3 The discharge from the drainage systems and interceptors should be inspected for any signs of unexpected discolouration (e.g. hydrocarbons), vegetative die-back, odour, etc in the vicinity.

3.4 Bunds (diesel tank) and associated tanks (interceptor tanks, fuel storage tanks etc) should be inspected for leaks from flanges, valves and pipework.

3.5 All drainage pipework, oil interceptors and bunds should be inspected for signs of structural damage.

3.6 Should any interceptor or section of drainage system require desludging or cleaning, the Facility Manager shall ensure that such desludging or cleaning is conducted in an environmentally responsible manner by a designated appropriate contractor. If in the case of suspected contaminated waste generated from the cleaning procedure, the following shall be undertaken. The waste will be inspected by an appropriate qualified person e.g. Environmental Consultant, and analysed if deemed necessary and disposed of through appropriate waste channels as above..

As minimum, the oil interceptors should be desludged on a 6 monthly basis. A record of the quantities desludged and the destination of the waste should be maintained. The pipe network shall be cleaned as minimum on a 3 yearly basis or more frequent if deemed necessary.

4.0 Procedure: Daily Litter Inspection

4.1 On a daily basis the site and surrounding areas shall be inspected for the presence of litter.

4.2 A record of inspections should be maintained on the *Daily Litter Inspection Form (EWF 1.2)*

4.3 The frequency of daily litter patrols be increased in times of high wind or when evidence of abnormal litter is present

5.0 Procedure: Weekly Environmental Nuisance Inspection

5.1 On a weekly basis the site shall be inspected for the presence of the following;

- Vermin.
- Birds
- Flies
- Mud
- Litter
- Dust and Odour

6.2 A record of inspections should be maintained on the *Weekly Environmental Nuisance Inspection Form (EWF 1.3)*

6.0 Responsibility:

The Facility Manager is responsible for the implementation of this procedure and the initiation of a corrective action if deemed necessary.

7.0 References:

EWF1.1 Weekly Site Drainage System, Bunds, Silt Traps/Interceptor Tanks, Oil Interceptors and Spill Kits Inspection Forms.
EWF1.2 Daily Litter Inspection Form
EWF1.3 Weekly Nuisance Inspection Form
EWF1.4 Foulwater Removal Logsheet.

Weekly Site Drainage, Bunds, Silt Traps/ Interceptor Tanks, Oils Interceptors and Spill Kits Inspection Form EWF 1.1	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray Approved By: Linda Cahill Revision Number: 3 Effective Date: 01/01/2009	Midland Waste Disposal Ltd

Diesel Tank Bund/ Diesel Filling Area Weekly Inspection Form			
Site: *Midland Waste Disposal Ltd. Navan*		**Date and Time Inspection**	/ / : am/pm
General Visual Inspection			
Visual Inspection of Water Within Bund			
Wastewater Removal Required			
Wastewater Quantity and Destination			
Structural Damage			
Maintenance Requirements (Responsibility)			
Other Corrective Action			

Weekly Site Drainage, Bunds, Silt Traps/ Interceptor Tanks, Oils Interceptors and Spill Kits Inspection Form EWF 1.1	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Signed: Date:

Wastewater Percolation Chamber Weekly Inspection Form			
Site: *Midland Waste Disposal Ltd. Navan*		**Date and Time Inspection**	/ / : am/pm
General Visual Description			
Visual Inspection along Waste Water Drainage Channel			
Desludging Requirement			
Sludge Quantity and Destination			
Structural Damage			
Maintenance Requirements (Responsibility)			
Other Corrective Action			
General Visual Description			

Weekly Site Drainage, Bunds, Silt Traps/ Interceptor Tanks, Oils Interceptors and Spill Kits Inspection Form EWF 1.1	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Signed		**Date**	
Surface Water Drainage Weekly Inspection Form			
Site: *Midland Waste Disposal Ltd. Navan*		**Date and Time Inspection**	/ / : am/pm
General Visual Inspection			
Visual Inspection of Water at all Rain Gulleys			
Visual Inspection of Silt Trap/Interceptor Tank			
Desludging Requirement			
Sludge Quantity and Destination			
Structural Damage			
Maintenance Requirements (Responsibility)			

Weekly Site Drainage, Bunds, Silt Traps/ Interceptor Tanks, Oils Interceptors and Spill Kits Inspection Form EWF 1.1	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Other Corrective Action					
Report No.		**Date and Time Inspection**	/ / : am/pm		
Spill Kits					
Location 1.	**All items in place**	**YES**	**/**	**NO**	**if no give details**
Location 2.	**All items in place**	**YES**	**/**	**NO**	**if no give details**
Location 3.	**All items in place**	**YES**	**/**	**NO**	**if no give details**
Location 4.	**All items in place**	**YES**	**/**	**NO**	**if no give details**
Maintenance Requirements (Responsibility)					
Other Corrective Action					
Signed		**Date**			

Weekly Site Drainage, Bunds, Silt Traps/ Interceptor Tanks, Oils Interceptors and Spill Kits Inspection Form EWF 1.1	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	Midland Waste Disposal Ltd
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Daily Litter Inspection Form EWF 1.2	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Daily Litter Inspection Form			
Site:	**Midland Waste Disposal Ltd. Navan**	**Date and Time Inspection**	/ / : am/pm
LITTER **Was any litter observed on the internal roadways or outside the main entrance of the facility or along the boundary fence? If yes ensure all litter is collected and transferred to appropriate containers for disposal or recycling.**			
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Saturday			
CORRECTIVE ACTION **Detail any corrective action required arising from the previous observations?**			
Signed		**Date**	

Weekly Nuisance Inspection Form EWF 1.3	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Weekly Nuisance Inspection Form			
Site:	**Midland Waste Disposal Ltd. Navan**	**Date and Time Inspection**	/ / : am/pm
VERMIN **Were all bait boxes checked?** **What other signs, if any, of vermin presence were noted? (e.g. faecal matter, visual etc)**			
BIRDS **Detail any birds observed on site, their location number and their activities if creating a nuisance (e.g. scavenging)?**			
FLIES **Detail any fly infestations observed and their location?**			
MUD **Was any mud observed on internal roads or outside the main entrance of the facility?**			
DUST/ODOUR **1. Observations within site boundary** **Are plumes of dust being generated through on site activities? Is there any noticeable odour nuisance being generated from on-site activities?**			
2. Observations outside site boundary at adjacent roadway **Are plumes of dust being generated through on site activities?**			
3. Is there any noticeable odour nuisance being generated from on-site activities?			
CORRECTIVE ACTION **Detail any corrective action required arising from the previous observations?**			
Signed		**Date**	

Foulwater Removal Logsheet **EWF 1.4**	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

Date/Time	Name of Foul Water Carrier	Volume of foulwater removed (m^3)	Name & Address Of Destination Waste Treatment Plant	Any Incidents/Spillages? Yes/No	Details	Signature

1.0 Purpose

The purpose of this programme is to define appropriate procedures in response to potential emergency situations occurring at this site including environmental accidents and/or emergencies.

2.0 Scope

The scope of this procedure is the application of the Environmental Emergency Plan:

Document No.	Description	Revision No.
ERP 2.0	Spill Clean Up Procedure	1
ERP 3.0	General Fire/Explosion Procedure	1
ERP 4.0	Internal/External Flooding Procedure	1
ERP 5.0	Malicious Damage Procedure	1
ERP 6.0	Unforeseen Emergency Procedure	1

3.0 Definitions

Environmental Emergency Response Team
The Facility Manager, the Supervisors and any other person or persons designated by the aforementioned individual for membership on the Emergency Response Team see appendix A.

4.0 Procedure

4.1 Should an emergency situation occur, procedures from the Environmental Emergency Plan, which details each emergency situation and proposed response should the emergency occur, are implemented

4.2 Each Environmental Response Procedure is completed with reference to potential emergency situations. The response documented within the Environmental Emergency Reponses Procedure reflects the likelihood of the situation occurring and the associated potential environmental impacts of this occurrence.

4.3 On a weekly basis, the Facility Manager or designee checks all emergency response equipment to ensure that it is provided in agreed quantities and in suitable working order. Any discrepancies shall be remedied at once.

4.4 On an annual basis, and at any other time deemed necessary, the Facility Manager in conjunction with the Environmental Manager reviews the documented response procedures for associated emergency situation. Additional Procedures may be prepared as identified by environmental reviews/audits, environmental compliance monitoring reports, personnel during routine working hours or other communications which bring potential emergency situations to the attention of the Management.

4.5 Following an emergency, the Facility Manager, shall record details of the incident. Following a comprehensive investigation into the source of the emergency situation, a corrective action shall be formulated by the Facility Manager and signed off on the *Environmental Corrective and Preventive Action Form (EPF1.1).*

4.6 In the event of the following incidents, records shall be maintained and the Facility Manager shall notify the relevant authority by telephone and facsimile as soon as possible:

- Any nuisance caused by the activities carried out by Midland Waste Disposal Ltd.
- Any emission, which results in the contravention of any relevant standard, including any standard for an environmental medium, or any relevant emission limit value, prescribed under any relevant enactment.
- Any emission, which does not comply with the requirements of the Waste Licence 131-02.
- Any trigger level specified in the Waste Licence 131-02, which is attained or exceeded.
- Any indication that environmental pollution has or may have, taken place.
- Any occurrence with the potential for environmental pollution, and,
- Any emergency

4.7 When notifying the relevant authority, as part of the notification, the date and time of the incident, details of the occurrence and the steps taken to minimise the emissions and to avoid a recurrence shall be included. The written record should be submitted to the relevant authority as soon as practicable but within 5 working days after the occurrence of the incident.

4.8 Should any further actions be taken after the date of written notification, as a result of any incident occurring, a written report shall be forwarded of those actions to the Agency as soon as practicable and no later than 10 days after the initiation of those actions.

5.0 Responsibility

The Facility Manager is responsible for the implementation of this procedure and also for selecting and implementing the appropriate procedure from the Environmental Emergency Plan in the event or an emergency or incident on-site.

Following an emergency or incident on-site, the Facility Manager is responsible for notifying relevant authority and, for compiling a written report of the incident.

Appendix A Emergency Response Team

Role	Name	Area	Extension/Mobile
Emergency Controller	**Francis Flynn**	**Midland Waste Navan**	**087-2833835**
Deputy Emergency Controller	**Raymond Duignan**	**Midland Waste Navan**	**087-0508617**
News/Media Co-ordinator	**Garrett Leech**	**Midland Waste Navan**	**087-2833835**
Fire Marshall	**Sailius Stankevicius**	**Midland Waste Navan**	**046-9022222**
Fire Fighter	**Gundars Kippa**	**Midland Waste Navan**	**046-9022222**
First Aider	**Henrik Biazeuie**	**Midland Waste Navan**	**046-9022222**
Assembly Area Co-ordinator	**Henrik Biazeuie**	**Midland Waste Navan**	**046-9022222**

Spill Clean-up Procedure ERP 2.0	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

1.0 Purpose

This procedure details the steps to be taken when dealing with a chemical substance spillage on site. It is required in order to:

- Protect Employees
- Protect the Environment
- Prevent Fugitive Emissions

2.0 Scope

This procedure should be followed for all small, large and massive spills, which may occur.

Definitions:

Small Spill:	Less than 5 litres
Large Spill:	Greater than 5 litres and less than 250 litres
Massive Spill:	Greater than 250 litres

3.0 Procedure

3.1 Ensure that hazardous materials are handled (loaded, unloaded and moved) by a competent person using the correct equipment and appropriate protective clothing. Appropriate precautions should be taken at all times to minimise the risk of accidental spillage.

3.2 In the event of a spillage occurring, the Facility Manager shall initially investigate the following issues:

- How long has it been since the incident occurred?
- Consult the relevant data sheets (Material Safety Data Sheet or otherwise) for the method of spill containment and fire control of the affected material.
- Contact the relevant emergency response number (local fire service, police, hospital and Environmental Protection Agency telephone numbers are posted on the environmental notice board in the staff canteen and are also available at the reception) and any external emergency response help.
- Locate the nearest fire suppression system as appropriate; (Dry powder extinguishers for ABC fires (wood, paper, textiles, liquid fuels and gases) Foam extinguishers for AB fires (wood, paper, textiles and liquid fuels) Carbon Dioxide (liquid fuel fires and electrical equipment).

- Identify the location of the nearest First Aid station
- Note the wind direction and any possible sources of ignition i.e. naked lights, machinery, electrical fittings and combustible material and remove them from the area.
- Evacuate the area (for large spills if necessary)
- The Facility Manager or any other designated person from the Emergency Response Team shall ensure that all personnel are evacuated in a calm, efficient manner. Staff should be instructed to walk briskly to their designated evacuation locations.
- If flammable material is involved in the spill, isolate equipment and materials that may be affected
- If deemed necessary, the Facility Manager or any other designated person from the Emergency Response Team shall instruct for the appropriate emergency services to be contacted. A list of telephone numbers for all emergency services are posted on the environmental notice board in the staff canteen and are also available at the main reception.

3.3 The spillage must be contained using absorbent material, socks, booms or sandbags to create a secure dike. These are located in the high risk areas of spillage throughout the facility. The Facility Manager or any other designated person from the Emergency Response Team shall ensure that all appropriate personal protective equipment is worn (as detailed in the Material Safety Data Sheet for the spilled material [s]).

3.4 If the spillage emanated from a drum, position the drum so that the ruptured section is in an upwards direction, thereby preventing a further leakage.

3.5 Once the spill has been contained the liquid shall either be pumped, or removed into a barrel using non-spark shovels and labelled appropriately (contents, name and date).

3.6 In the event of a spillage that contaminates the foul water holding chambers, the collected foul water will not be tankered off-site to the wastewater treatment plant without the consultation of the operator by the Facility Manager. Records of such consultant will be recorded and held with the *Environmental Corrective and Preventive Action Form (EPF1.1)* on file in the office.

3.7 Clean-up operation.

- Use non-sparking shovels and brushes to sweep the spilled material into drums.
- Start on the outside and work in towards the centre of the spill
- Do no mix different types of waste
- Drum the waste and seal the container or bag and double bag.
- Label the waste with the destination name, appropriate hazard label and name of waste giving as much information as possible on contents, plus concentrations of constituents, etc.
- If the spill occurred due to a damaged drum, place the ruptured drum into a salvage drum container, until disposal is arranged.
- Decontaminate personnel by using the washing facilities.

3.8 Any waste material resulting from a spillage clean-up shall be dispatched to an appropriate facility for disposal and/or recovery under the supervision of the Facility Manager.

3.9 Following an emergency, the Facility Manager shall record details of incident. Following a comprehensive investigation into the source of the emergency situation, a corrective action shall be formulated by the Facility Manager and signed off on the *Environmental Corrective and Preventive Action Form EPF1.1*

4.0 Responsibility

General staff and contractors of Midland Waste Disposal Ltd. are responsible for being aware of the procedure and their responsibilities/requirements/obligations.

The Facility Manager is responsible for making Midland Waste Disposal Ltd. employees aware of their responsibilities and obligations should a spillage occur.

Spill Clean-up Procedure ERP 2.0	Facility: Midland Waste Disposal W0131-02
Prepared By: Elaine Murray	
Approved By: Linda Cahill	
Revision Number: 3	
Effective Date: 01/01/2009	

1.0 Purpose

A procedure to deal with fire/explosion emergencies is required for the following reasons:

- To protect Employees.
- To protect the Environment.
- To prevent Fugitive emissions

2.0 Scope

This procedure should be followed in the event of a fire or explosion at this site.

3.0 Procedure

3.1 Employees shall only attempt to fight a fire if safe to do so. If an employee feels that they cannot tackle a fire safely and effectively, **EVACUATION OF ALL PERSONNEL IS THE PRIMARY PRIORITY.**

3.2 The Facility Manager works to evacuate the area in a calm, efficient manner. All staff and contractors shall be instructed to walk briskly to the designated evacuation location point.

3.3 In the event of a fire/explosion occurring, the Facility Manger shall complete a roll call to account for all employees and contractors that may be present on-site.

3.4 The Facility Manager shall identify the location of the fire/explosion through dialogue with the individual who discovered the fire and shall take one of the following actions:

- Determine whether the fire can be **SAFELY** isolated utilising the available fire fighting equipment.
- If the fire is not controlled with the fire fighting equipment available, the local fire brigade is notified immediately. Local fire, police and hospital numbers are posted on the environmental notice board in the staff canteen and are also available in the main reception.

3.5 Personnel shall not re-enter the building unless the Facility Manager deems it safe to do so.

3.6 Once the fire has been extinguished or the explosion controlled, the Facility Manager, shall complete a clean up operation as per EPR 2.0 using the available resources

3.7 All fire-affected material is checked thoroughly in order to ensure it is quenched. If the affected material is considered hazardous, it is stored in a container and collected as soon as possible by a certified hazardous waste disposal contractor.

3.8 The Facility Manager will contact the relevant authority; in the event of any incident on site paying due regard to conditions specific to the Waste Licence 131-02.

3.9 Following an emergency, the Facility Manager, or other designated responsible person shall record details of the incident. Following a comprehensive investigation into the source of the emergency situation, a corrective action shall be formulated by the Facility Manager and signed off on the *Environmental Corrective and Preventive Action From (EPF1.1)*

4.0 Responsibility

General staff and contractors of Midland Waste Disposal Ltd. are responsible for being aware of the procedure and their responsibilities/requirements/obligations in relation to the General Fire/Explosion procedure.

The Facility Manager is responsible for making Midland Waste Disposal Ltd. employees aware of their responsibilities and obligations should a fire/explosion occur.

1.0 Purpose

This procedure is required in order to:

- Minimise environmental damage from a flooding incident.
- Minimise damage to property or materials on site.

2.0 Scope

This procedure should be followed in the event of a flooding incident at this site.

3.0 Procedure

3.1 Locate source of flooding and, if possible and safe to do so, shut it off.

3.2 Remove containers of environmental hazardous material to a safe location to prevent their entry to the drainage system. As per *EPR2.0* ensure all hazardous materials are handled (loaded, unloaded and moved) by a competent person using the correct equipment and appropriate protective clothing. Appropriate precautions should be taken at all times to minimise the risk of accidental spillage.

3.3 The Facility Manager shall contact the relevant emergency response number (local fire service, police, hospital and Environmental Protection Agency telephone numbers are posted on the environmental notice board in the staff canteen and also in the Main Reception Area) and any external emergency response help if he/she feels that the incident cannot be dealt with safely utilising on-site resources.

3.4 Once the source of the flooding has been eliminated, the Facility Manager will commence the mop up operation, if required as per *EPR2.0*.

3.5 The Facility Manager, or other designated responsible person, will contact the relevant authority in the event of any incident on-site paying due regard to specific conditions of the Waste Licence 131-02.

3.6 Following an emergency, the Facility Manager shall record details of the incident. Following a comprehensive investigation into the source of the emergency situation, a corrective action shall be formulated by the Facility Manager and signed off on the *Environmental Corrective and Preventive Action EPF1.1)*

4.0 Responsibility

General staff and contractors of Midland Waste Disposal Ltd. are responsible for being aware of the Flooding Procedure and their responsibilities / requirements / obligations.

The Facility Manager is responsible for making Midland Waste Disposal Ltd. employees aware of their responsibilities and obligations should a flooding incident occur.

The Facility Manager is responsible for recording the details of any incident that occurs and ensuring that an effective corrective action is implemented.

1.0 Purpose

This procedure is required in order to:

- Monitor malicious damage
- Prevent malicious damage.

2.0 Scope

This procedure should be followed in the event of a malicious damage being inflicted at this site.

3.0 Procedure

3.1 Where any occurrence of malicious damage is noted or where persons are observed causing malicious damaged the Facility Manager is informed.

3.2 Where malicious damage results in a significant environmental impact, or a potential significant environmental impact the Facility Manager is advised who then undertake to minimise and repair the damage caused.

3.3 Persons observed causing malicious damage are subjected to internal disciplinary action. The Facility Manager, will report external persons to the Gardai.

3.4 The Facility Manager will contact relevant authority in the event of any incident on site paying due regard to the conditions set out in the Waste Licence 131-02.

3.5 Following an emergency, the Facility Manager shall record details of the incident. Following a comprehensive investigation into the source of the emergency situation, a corrective action shall be formulated by the Facility Manager and signed off on the *Environmental Corrective and Preventive Action Form EPF1.1)*

4.0 Responsibility

General staff and contractors of Midland Waste Disposal Ltd. are responsible for being aware of the Malicious Damage Procedure and their responsibilities / requirements / obligations.

The Facility Manager is responsible for reporting any external persons found causing malicious damage, to the Gardai.

1.0 Purpose

To outline the procedure to be adhered to in the event of an unforeseen emergency.

2.0 Scope

This procedure should be followed in the event of an unforeseen emergency occurring at this site.

3.0 Procedure

3.1 Following the occurrence of an incident requiring emergency action, the observant shall contact the most senior representative of management on-site.

3.2 Should it be deemed necessary by the Facility Manager the transfer station shall be evacuated and the emergency services contacted (list of local fire, policy and hospital telephone numbers are posted on the environmental noticeboard in the staff canteen and are also available at the main reception.

3.3 There shall be no re-entry permitted on site, until clearance is provided by a representative of the emergency services AND the most senior representative of management on-site.

3.4 Should the incident be determined to be capable of being addressed in-house, under the guidance of the most senior representative of management on-site, the Environmental Emergency Response Team shall be mobilised paying due regard to the appropriate emergency response procedure (ERP 2.0, 3.0, 4.0, 5.0.)

3.5 The Facility Manager is responsible for informing the relevant authority if hazardous chemicals or firewater have infiltrated the drainage network.

3.6 Following an emergency, the Facility Manager shall record details of the incident. Following a comprehensive investigation into the source of the emergency situation, a corrective action shall be formulated by the Facility Manager and signed off on the *Environmental Corrective and Preventive Action Form EPF1.1)*

4.0 Responsibility

General staff and contractors of Midland Waste Disposal Ltd. are responsible for being aware of this procedure and their responsibilities / requirements / obligations.

Training and awareness will be provided by Midland Waste Disposal Ltd. on an annual basis as a minimum.

The Facility Manager is responsible for informing the relevant authority should any hazardous chemicals or firewater have infiltrated the drainage network.

Following the emergency, the Facility Manager is responsible for ensuring that the incident has been documented and, that effective corrective action has been implemented.