ANNUAL ENVIRONMENTAL REPORT

AES NENAGH WASTE TRANSFER STATION

January -December 2011

Waste Licence Registration Number:	W0240-01
Licensee:	Advanced Environmental Solutions (AES) (Ireland) Limited
Location of Activity:	Solsborough, Springfort Cross, Nenagh, County Tipperary
Attention:	Office of Environmental Enforcement EPA Headquarters, P.O. Box 3000, Johnstown Castle Estate, Co. Wexford.
Prepared by:	ANUA Environmental

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Bord na Móna - with nature

AES

REVISION CONTROL TABLE

User is Responsible for Checking the Revision Status of This Document.

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Client: Bord na Móna.

Keywords: Waste Transfer Station, Annual Environmental Report (AER), waste recovery and disposal, environmental monitoring.

Abstracts: This report presents the Annual Environmental Report for a Waste Transfer Station in Nenagh, Co. Tipperary to the Environmental Protection Agency. The report covers the annual reporting period of 2011.

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1.0 INTRODUCTION

The Environmental Protection Agency (EPA) issued Advanced Environmental Solutions (Ireland) Ltd, with a Waste Licence for its Waste Transfer Station at Solsborough, Springfort Cross, Nenagh, Co. Tipperary on 29th July 2009. The Waste Licence reference number is W0240-01.

The facility is currently licensed to accept a maximum of 24,750 tonnes of waste per annum (10,529 tonnes of Household waste, 12,730 tonnes of Commercial waste and 1,491 tonnes of Construction and Demolition waste). The site is located in Springfort Cross, west of Nenagh 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.

ANUA Environmental was retained to prepare and submit the Annual Environmental Report (AER) for the facility in compliance with Condition 11.8 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 2011 up to and including the 31st December 2011.

1.1 Site Description

As previously referred to, AES operates a Waste Licence (W0240-01) for its Waste Transfer Station at Solsborough, Springfort Cross, Nenagh, Co. Tipperary.

Waste accepted includes mixed municipal, dry recyclables and C&D. Activities associated with the facility involve manual segregation of domestic and commercial waste, and a small amount of construction and demolition (C&D) waste. There is no baling and there are no ballistic separators. Segregated waste is then transported to larger AES sites for further segregation, baling and sale to overseas brokers. Any non-recyclable waste is land filled.

2.0 WASTE MANAGEMENT RECORD

2.1 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 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.*

2.2 Waste Quantities and Composition

The incoming and outgoing waste volumes to Nenagh Waste Transfer Station are presented in Table 2.1 & 2.2.

2.2.1 Waste Recovery Report

A Waste recovery report is required in compliance with Condition 11.14. Report on the contribution of the facility to the achievement of waste recovery objectives stated in Condition 2.2.2.2 and as otherwise may be stated in National and European Union waste policies, as a minimum, including the following:

(i) the recovery of metals
(ii) the recovery of C&D derived waste materials
(iii) the recovery/treatment of biowaste (including contribution of facility to the pre-treatment targets in the EU Landfill Directive)
(iv) the separation and recovery of other recyclable materials

Table 2.1: Incoming Waste to Nenagh Waste Transfer Facility 2011

EWC Code	Incoming Waste (Tonnes)
15 01 01 – Baled Cardboard	38.01
15 01 01 – Baled Paper	1.00
15 01 01 – Loose Cardboard	6.06
15 01 01 – Loose Paper	1.38
15 01 01 – Mixed Paper & Cardboard Packaging	203.91
15 01 02 – Plastic Packaging	9.40
15 01 02 – Baled Plastic	24.38
15 01 03 – Wood Packaging	16.78
15 01 07 – All Glass Bottles & Jars	265.48
16 03 04 – Inorganic Wastes other than those mentioned in 16 03 03 – non hazardous	41.58
17 02 01 – Wood from C & D	78.78
17 04 07 – Mixed Metals	111.80
17 09 04 – Mixed C&D Waste	196.33
18 01 04 – Health Care Waste	53.30
19 08 12 – Sludges from Biological Treatment of Industrial Wastewater other than those mentioned in 19 08 11	3.56
20 01 08 – Biodegradable Kitchen & Canteen Waste	525.96
20 01 39 – Plastics	71.05
20 01 40 – Metals	29.71
20 02 01 – Biodegradable Waste	130.12
20 03 01 – Municipal Waste (Commercial)	14,241.72
20 03 01 – Municipal Waste (Domestic)	3,950.76
20 03 01 – Kerbside Recyclables (Mixed Dry Recyclables	3,721.92
20 03 03 – Street Cleaning Residues	228.42
Total Incoming Waste	**23,951.41**

Table 2.2 presents the waste recovered/ disposed from the facility.

Table 2.2: Outgoing Waste Recovered / Disposed from Nenagh Waste Transfer Station

EWC Code	Outgoing Waste (Tonnes)	Waste Recovery / Disposal Destination Name	Waste Recovery / Disposal Destination Address	Licence / Permit No.
13 05 07	8.06	ENVA Ireland Ltd.	Clonminam Industrial Estate, Portlaoise, Co. Laois	W0184-01
15 01 01 - BC	5.72	AES Tullamore	Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly	W0104-02
15 01 02 – PL	46.38	Danelle Recycling Ltd	Kilnock, Ballon, Co. Carlow	WP/25/06
15 01 02 – PL	13.06	Leinster Environmentals	Clermont Business Park, Haggardstown, Dundalk, Co Louth	WP 2008/06
15 01 03	35.89	Thomas O'Neill (Grain Merchant) Ltd	18 Upper William Street, Limerick	WP LK 05(a)
15 01 07	283.12	Rehab Glassco Ltd	Unit 4 Osberstown Industrial Park, Caragh Road, Naas, Co Kildare	WFP-KE-08-0357-01
15 01 07	35.90	AES Portlaoise	Kyletalesha, Portlaoise, Co. Laois	W0194-02
17 02 01	73.17	Thomas O'Neill (Grain Merchant) Ltd	18 Upper William Street, Limerick	WP LK 05(a)
17 04 07	185.84	Hegarty Metal Recycling Ltd.	Ballysimon Road, Limerick	WP 01-2001
17 09 04	52.48	John O'Dwyer-Construction Thurles Ltd	Bord na Crusha, Thurles, Co. Tipperary	WP TN 16
17 09 04	30.92	David Carroll	Boston, Cloughjordan, Co Tipperary	WP/TN/126
20 01 08	113.42	Acorn Recycling	Archerstown Industrial Estate, Thurles Co. Tipperary	W0249-01
20 01 08	254.18	AES Portlaoise	Kyletalesha, Portlaoise, Co. Laois	W0194-02
20 01 08	60.00	Miltown Composting Ltd	Milltown More & Moorstown, Fethard, Co. Tipperary	WM-WP-28-03
20 03 01 – C	8,083.12	Drehid Waste Management Facility	Killinagh Upper, Carbury, Co. Kildare	W0201-03
20 03 01 – C	4,384.16	Kyletalesha Landfill, Laois County Council	Clonsoughy, Kyleclonhobert, Co. Laois	W0026-03
20 03 01 – C	838.66	North Tipperary County Council - Ballaghveny Landfill	Ballymackey, Neneagh, Co. Tipperary	W0078-03

Table 2.2 continued: Outgoing Waste Recovered / Disposed from Nenagh Waste Transfer Station				
EWC Code	**Outgoing Waste (Tonnes)**	**Waste Recovery / Disposal Destination Name**	**Waste Recovery / Disposal Destination Address**	**Licence / Permit No.**
20 03 01 – C	1,058.58	Oxigen Environmental Ltd.	Merrywell Industrial Estate, Ballymount Road, Ballymount, Dublin 22	W0208-02
20 03 01 – C	55.78	Thorntons Recycling	Unit S3B Henry Road, Parkwest Business Park, Dublin	WCP-DC-09-1190-01
20 03 01- D	569.94	Drehid Waste Management Facility	Killinagh Upper, Carbury, Co. Kildare	W0201-03
20 03 01 – D	2,114.02	Kyletalesha Landfill, Laois County Council	Clonsoughy, Kyleclonhobert, Co. Laois	W0026-03
20 03 01 – D	2,012.24	North Tipperary County Council - Ballaghveny Landfill	Ballymackey, Neneagh, Co. Tipperary	W0078-03
20 03 01 – K	45.64	Thorntons Recycling	Unit S3B Henry Road, Parkwest Business Park, Dublin	WCP-DC-09-1190-01
20 03 01 – K	3,715.24	AES Tullamore	Cappincur Industrial Estate, Daingean Road, Tullamore, Co. Offaly	W0104-02
20 03 03	120.86	Drehid Waste Management Facility	Killinagh Upper, Carbury, Co. Kildare	W0201-03
20 03 07 – SRF	97.10	Thorntons Recycling	Unit S3B Henry Road, Parkwest Business Park, Dublin	WCP-DC-09-1190-01
White goods	4.88	AES Navan	Proudstown Road, Navan, Co. Meath	W0131-02
Total Waste	**24,298.36**			

3.0 EMISSIONS FROM THE FACILITY

Waste water removed from the truck wash, grit traps, leachate tank and oil interceptor was tankered off-site for treatment by Thornton's Recycling. The total removal was 8,000 Litres for the 2011 calendar year due to the system being cleaned out.

Storm water, emissions to sewer, dust and noise emissions monitoring results are discussed in Section 6.0 of this report and the monitoring locations map is included in *Appendix 1*.

4.0 RESOURCE AND ENERGY CONSUMPTION

4.1 Resource Consumption Summary

Resources consumed at the Nenagh Waste Transfer Station are recorded. During the reporting period water usage on-site is not metered and has not been recorded for this reason. The total consumption of Road Diesel and Green Diesel was 500,200 Litres.

The total electrical consumption at the site was 3,955 kWh during the reporting period. During the same period Waste Water removed from truck wash, grit traps, leachate tank, oil interceptor by Thornton's Recycling was 8,000 Litres.

4.2 Energy Efficiency Audit Report Summary

To comply with Condition 7.1 of the Waste Licence an Energy Efficiency Audit was carried out in August 2010 and the full report was submitted to the EPA Agency in the Annual Environmental Report for the year ending 2010.

4.3 Water Consumption

During the reporting period Waste Water removed from truck wash, grit traps, leachate tank, oil interceptor by Thornton's Recycling was 8,000 Litres.

4.4 Raw Materials Consumption & Waste Generation

During the monitoring period streamlining routes was commenced to reduce fuel consumption and will be continuously monitored in 2012.

Please refer to the Proposed Schedule of Objective & Targets for 2012 (Section 5.2 – Table 5.2) for further proposals being developed to minimise raw material consumption and waste generation.

5.0 ENVIRONMENTAL OBJECTIVES & TARGETS

5.1 Progress against Targets for 2011

Details on progress made against the Targets for 2011 are presented in Table 5.1.

Table 5.1: Progress against Targets for 2011

Ref	Objective	Target	Status
1	Diversion of biodegradable waste from landfill	Household Brown Bin Service to be extended in 2011.	Rollout in urban areas of the region is ongoing, rural areas are considered on a case by case basis & dependant on demand
		Pay-by-Lift service being offered to Household customers to incentivise the use of the more cost effective recycling and brown bins.	This service is offered to all customers
		The quantity of BMW sent to Landfill will be calculated on a quarterly basis to ensure Diversion Targets are met.	On-going
2	Environmental Monitoring	As per Waste Licence: Should any limits be exceeded, corrective actions to be implemented	On-going
3	Investigate options for the reduction and/or re-use of water on-site	Investigate the feasibility of the collection and re-use of rainwater for vehicle washing.	A feasibility study was carried out to assess if the use of rainwater for vehicle washing would be a viable option. However due to space & financial limitations the installation of a rainwater harvesting infrastructure has been abandoned until further notice
4	Efficiency of Fuel Consumption	Streamline Routes. Computer programme being acquired for AES Group to manage collection route to ensure maximum efficiency of labour and raw materials.	Rerouting is ongoing & Nenagh are currently in the third phase of rerouting - this is dependant on new additions to AES customer base in the region & is reviewed on a continuous basis.
		Investigating options for increased fuel efficiency through engine modification e.g. Addition of water vapour to inlet to cool air.	On-going
5	Environmental Training & Awareness	As per training matrix and schedule.	On-going
6	Upkeep of Environmental Management System	Ongoing review of procedures, objectives & targets, and aspects register.	On-going.
7	Vehicle Maintenance Programme to be reviewed	Vehicle Maintenance Contractor to be hired for AES Group to provide a more reliable and traceable service.	Currently with procurement for tendering.

5.2 Schedule of Objectives and Targets for 2012

The proposed schedule of Objectives and Targets for 2012 is presented in Table 5.2.

Table 5.2: Proposed Schedule of Objectives and Targets for 2012

Ref	Objective	Target	Timescale	Response	Status
1	Diversion of biodegradable waste from landfill	Household Brown Bin Service to be extended in 2012.	Dec-12	LA	On-going.
		Pay-by-Lift service being offered to Household customers to incentivise the use of the more cost effective recycling and brown bins.	Dec-12	LA	Ongoing.
		The quantity of BMW sent to Landfill will be calculated on a quarterly basis to ensure that Diversion Targets are met.	Dec-12	LA	Ongoing.
2	Environmental Monitoring	As per Waste Licence: Should any limits be exceeded, corrective actions to be implemented.	Dec-12	LA/LG/CG	Ongoing.
		Investigate the feasibility of extending the bin wash area	Sept-12	LA/LG/CG	To allow a truck to be parked for washing
		Review Surface water drainage network and maintenance of site storm water interceptors	May-12	LA/LG/CG	Ongoing.
3	Efficiency of Fuel Consumption	Streamline Routes. Computer programme being acquired for AES Group to manage collection route to ensure maximum efficiency of labour and raw materials.	Dec-12	Logistics Manager	Streamlining is ongoing & will be reviewed continuously as new routes/customers are added
		Investigating options for increased fuel efficiency through engine modification e.g. Addition of water vapour to inlet to cool air.	Dec-12	LG	Ongoing.
4	Environmental Training & Awareness	As per training matrix and schedule.	Oct-12	LA/LG/CG /NM	Ongoing.
5	Upkeep of Environmental Management System	Ongoing review of procedures, objectives & targets, records, training and aspects register.	Dec-12	Enviro Team	Ongoing.
6	Vehicle Maintenance Programme to be reviewed	Vehicle Maintenance Contractor to be hired for AES Group to provide a more reliable and traceable service.	Dec-12	Group	Ongoing.
7	Completion of Specified Engineering Works	Construct the Firewater Retention Wall in accordance with the agreed SEW submitted to the EPA in 2011	Oct-12	LA	The project has been handed over to group procurement who have tendered the work. At present tender submissions are being reviewed & a contractor is expected to be appointed by April 2012

6.0 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 2011.

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

1. Noise — Annually
2. Dust Deposition — Quarterly
3. Storm Water Emissions — Weekly & Quarterly
4. Emissions to Sewer — Monthly & Quarterly

Sections 6.5 and 6.6 present a summary of the Environmental Management Programme and the Pollutant Release and Transfer Register for the facility.

6.1 Noise Monitoring Report Summary

In compliance with the requirements of the Waste Licence, W0240-01, annual noise monitoring at the Nenagh Waste Transfer Station was undertaken. Monitoring was carried out on the 14th and 15th of September 2011 (Report ECS3992 – Noise).

LA_{eq}, LA_{10} LA_{90} values and 1/3 Octave band analyses was determined at all four site boundary locations (N1 – N4) and at two noise sensitive locations (NSL1 and NSL2). The noise monitoring locations are presented in Table. 6.1. The noise monitoring locations are indentified in *Appendix I.*

Table 6.1: Location of Noise Measurements

Map Reference No.	Location Type	Description
N1	Boundary	South-west corner of site
N2	Boundary	North-west corner of site
N3	Boundary	North-east corner of site
N4	Boundary	South-east corner of site
NSL1	Sensitive	Between garage and house, across the road and ca. 20m from entrance to AES
NSL2	Sensitive	House, ca. 150m west of AES

The full set of results are presented in Table 6.2 overleaf.

Table 6.2: Noise Measurement Results (Limit value = 55dB(A) Leq)						
Map Reference No.	**Measurement Period (mins)**	**Time**	**L_{eq} dB(A)**	**L_{10} dB(A)**	**L_{90} dB(A)**	**L_{AFMax} dB(A)**
N-1	15 min	16:14	55.3	58.1	50.2	68.7
N-2	15 min	15:36	54.6	56.6	48.4	69.2
N-3	15 min	15:53	55.4	58.9	47.7	68.4
N-4	15 min	16:33	52.8	53.1	46.7	84.6
NSL-1	30 min	11:27	52.2	54.6	47.2	66.7
NSL-2	30 min	10:52	47.9	50.9	41.8	66.2

The daytime LA_{eq} recorded at the four boundary locations ranged from 53 dB(A) at N4 to 55 dB(A) at N3. At the noise sensitive locations the noise levels (L_{eq}) ranged from 48 dB(A) at NSL-2 to 52 dB(A) at NSL-1. Tonal noise was not detected at any of the boundary locations.

The noise levels (L_{eq}(A)) at the four boundary locations and the two noise sensitive locations were all below the limit of 55 dB(A).

6.2 Ambient Monitoring Summary

In compliance with the requirements of the Waste Licence, W0240-01, dust monitoring at the Nenagh Waste Transfer Station was carried out four times during the 2011 reporting period. There are four dust monitoring locations on site, detailed in Table 6.3, and the locations are indentified in *Appendix 1*.

Table 6.3: Dust Monitoring Locations	
Monitoring Location	**Description**
D1	South western corner of the facility
D2	North western corner of facility
D3	North eastern corner of facility
D4	South eastern corner of the facility

Four Bergerhoff dust gauges were continuously exposed for a 32 day period between the 24th January – 24th February (Quarter 1), for 28 days from 30th May – 27th June (Quarter 2), for 28 days from 15th August – 12th September (Quarter 3), and finally for 29 days from 3rd November – 2nd December 2011 (Quarter 4). The results for monitoring are presented in Table 6.4.

Table 6.4: Dust Monitoring Results (mg/m^2/day)					
Monitoring Location	***Dust Deposition Limit***	**Deposition Rate (Quarter 1) Report:ECS3827**	**Deposition Rate (Quarter 2) Report:ECS3922**	**Deposition Rate (Quarter 3) Report:ECS3992**	**Deposition Rate (Quarter 4) Report:ECS4043**
D1	*350*	239	92	105	113
D2	*350*	122	111	98	137
D3	*350*	144	**504**	**645**	249
D4	*350*	139	283	264	142

The dust deposition results at the D1, D2 and D4 monitoring locations are in compliance with the limit of 350 mg/m^2/day in all four monitoring events.

The results were elevated above the EPA limits at D3 (504 mg/m^2/day) during the second and third rounds of monitoring. The dust monitoring point D3 is located in the north-east corner of the facility and is adjacent to an external road which could be the cause of the elevated result. AES skips are stored around the gauge which indicates that the movement of skips in this area may have contributed to high dust concentrations. The presence of seeds, insects, a small twig and moss-like material in the dust jar could also have contributed to the high dust results in the Quarter 2 monitoring event.

The presence of vegetation and black and red solids in the D3 dust jar (645 mg/m^2/day) during could have contributed to the high dust results reported in Quarter 3. Furthermore, the average wind speed recorded for the monitoring period in September 2011 (1st – 12th) was 6.2 m/sec – with high wind speeds recorded from 10th (8m/s) to 12th (10.8m/s) September. According to the Beaufort Scale, a wind speed greater than 10.8m/s is described as a "Strong Breeze". This may also have contributed to the high result at D3, as dust from the external road, nearby trees etc would have easily entered the dust container.

Approval was given to AES Nenagh during 2011 to relocate the dust monitoring point D3 to an alternative location on the northern boundary of the facility (*EPA Ref: W0240-01/ap12db*). The monitoring point was changed for Quarter 4 2011 and as is evident in Table 6.4, there was a significant decrease in the dust deposition result. The new D3 monitoring location is identified in *Appendix 1*.

6.3 Storm Water & Emissions to Sewer Monitoring Report Summary

In accordance with Schedule C.2.3 of the Waste Licence W0240-01, the facility is required to carry out an assessment of the Storm Water emissions from the site on a weekly, monthly and quarterly basis and an assessment of the Emissions to Sewer from the site on a monthly and quarterly basis. The Emissions to Sewer sample includes runoff from the Waste Transfer

Building and runoff from the Truck Wash located at the south-side of the waste building. The Storm Water and Emissions to Sewer monitoring locations are described in Table 6.5 and the locations are indentified in *Appendix 1*.

Table 6.5: Storm Water & Emissions to Sewer Monitoring Locations	
Monitoring Location	**Description**
Storm Water	Discharge pipe from the Oil Interceptor
Emissions to Sewer	Outside the Waste Transfer Building – to the North-East side of the site

The results from the weekly and monthly monitoring at the Storm Water location are presented in Table 6.6 below. Quarterly Monitoring also occurred at this location. The results of the quarterly Storm Water monitoring events are presented in Table 6.7, overleaf. Emission limits for Storm Waters are not specified in the Waste Licence.

Table 6.6: Storm Water Results					
Parameter	**Weekly & Monthly Results**				
	16/02/2011	22/06/2011	19/10/2011	17/11/2011	8/12/2011
pH (pH Units)	7.2	6.2	7.5	7.1	7.0
Conductivity (µS/cm)	850	273	198	406	179
COD (mg/l)	<10	252	-	416	34
Suspended solids (mg/l)	<5	113	46	372	10
Mineral Oils (µg/l)	<10	-	-	-	-
Ammonia-N (mg/l)	-	-	-	-	-

Table 6.7: Quarterly Storm Water Results				
Parameter	**Quarter 1 Report – ECS3827**	**Quarter 2 Report – ECS3922**	**Quarter 3 Report – ECS3992**	**Quarter 4 Report – ECS4043**
pH (pH Units)	7.5	7.2	7.5	7.2
Conductivity (µS/cm)	282	224	488	438
On-site Inspection	Pale yellow, few suspended solids, slight odour	Cloudy colour, few suspended solids, slight odour	Cloudy / grey colour, some suspended solids, slight odour	Cloudy / grey colour, some suspended solids, slight odour
COD (mg/l)	33	22	31	96
Suspended Solids (mg/l)	8	33	66	128
Mineral Oils (µg/l)	<10	<10	<10	<10
Ammonia-N (mg/l)	0.52	0.61	0.78	0.62

Table 6.8 overleaf contains the monthly and quarterly results for the Emissions to Sewer samples and the emission limits are specified in accordance with Schedule B.3 of the Waste Licence W0240-01.

No exceedance were reported in any of the parameters above their limits as specified in Schedule B.3 of the Waste Licence Register No W0240-01.

Table 6.8: Average Monthly and Quarterly Emission to Sewer Results								
Parameter	**Emission Limit Values**	**Jan 2011 Q1 Report ECS3827**	**Feb 2011**	**March 2011**	**June 2011**	**July 2011**	**Oct 2011 Q3 Report ECS3992**	**Nov 2011 Q4 Report ECS4043**
pH (pH Units)	*6 to 10*	7.5	7.1	7.4	8.4	-	7.3	7.1
On-site Visual Inspection	-	Black / grey in colour, high suspended solids, foul odour	-	-	-	-	Grey in colour, some suspended solids, foul odour	Black in colour, high suspended solids, strong foul odour
COD (mg/l)	*3000*	630	1,578	478	600	-	102	701
BOD (mg/l)	*1000*	72	813	183	-	-	33	340
Suspended Solids (mg/l)	*1000*	679	856	-	194	-	103	197
Sulphates (mg/l)	*500*	88.46	-	-	-	-	70.12	116.3
Detergents (mg/l)	*100*	0.16	-	-	-	-	0.11	0.29
Oils, Fats & Greases (mg/l)	*100*	96	-	-	-	-	4	5
Ammonia-N (mg/l)	*50*	5.2	-	-	-	28	7.4	40
Phosphates (mg/l)	-	0.04	-	-	-	-	0.02	3.68
Mineral Oils (µg/l)	-	1,300	-	-	-	-	<10	160

6.4 Tank and Pipeline Testing & Inspection Reports

In accordance with the requirements of the company's Waste Licence (W0240-01) AES is required to conduct a bund integrity test, as stated under Condition 6.9.

Condition 6.9 of the Waste Licence states:

"The integrity and water tightness of all underground pipes, tanks, bunding structures and containers and their resistance to penetration by water or other materials carried or stored therein shall be tested and demonstrated by the licensee within six months of the date of grant of this licence. The testing shall be carried out by the licensee at least once every three years thereafter and reported to the Agency on each occasion. This testing shall be carried out in accordance with any guidance published by the Agency. A written record of all integrity tests and any maintenance or remedial work arising from them shall be maintained by the licensee".

Integrity and Water tightness testing of underground pipes, tanks and containers was carried out as part of the upgrade of the drainage system on site which was completed in February 2010. The Construction Quality Assurance Validation Report for these specified engineering works was submitted to the Agency on the 5th of August 2010.

The Diesel Tank Bund Integrity Test was conducted in December 2009 (Report ECS3523) and found to be compliant.

Mobile bunds were replaced between March and July 2009 and are due for integrity testing in 2012.

6.5 Environmental Management Programme

The EPA issued Advanced Environmental Solutions (Ireland) Ltd. with a Waste Licence for its Waste Transfer Station at Springfort Cross, Nenagh, Co. Tipperary on 29th July 2009. The Certification of Accreditation of EMS to ISO 14001 standards was granted in 2010.

In Table 5.2: Proposed Schedule of Objectives and Targets for 2012, monthly Environmental Management System meetings will be undertaken along with an ongoing review of procedures, objectives & targets, and aspects register.

7.0 SITE DEVELOPMENT/INFRASTRUCTURAL WORKS

7.1 Current Infrastructure in Place

The facility is currently licensed to accept a maximum of 24,750 tonnes of waste per annum (10,529 tonnes of Household waste, 12,730 tonnes of Commercial waste and 1,491 tonnes of Construction and Demolition waste).

On the 30th October 2009, AES submitted a letter to the EPA Ref. Submission of Details on Duty & Standby Capacity - AES Nenagh (Reg. No. W0240-01), as per Condition 3.19.2, with details on Duty & Standby Capacity in tonnes per day, of all waste handling and processing equipment to be used at AES Nenagh. Summary details on Duty & Standby Capacity are presented in Table 7.1.

Table 7.1: Details on Duty and Standby Capacity

Waste Processing Equipment	
1	Weighbridge
2	Excavator
3	Skid Steer
Waste capability per day of 125 tonne per day or 32,500 tonne per annum.	

AES Nenagh has a contract in place with an Auto Maintenance Company, Walkers Municipal Services, to regularly inspect and service company vehicles and site machinery. The contractor visits the site twice weekly to inspect the fleet. A record of all inspections and services is maintained. A qualified mechanic is also employed on-site.

7.2 Site Development Works during 2011

There was no site development works undertaken in 2011.

7.3 Proposed Development Works for 2012

During 2012, it is anticipated that the site will construct a firewater retaining wall along the northern boundary of the site to provide adequate firewater retention capacity. This wall will have a damming effect on water that reaches the northern site boundary either by the storm water drainage system or along the natural site slope that falls in a north eastern direction. The wall will be constructed to a suitable height so as to prevent breaching and firewater emissions from the site. The construction of this firewater retention wall will provide

complete containment of firewater and provide adequate environmental protection should a fire event occur at the facility. Further details are provided in Table 5.2: Proposed schedule of Objectives and Targets for 2012.

7.4 Review of Decommissioning Management Plan

As part of Condition 10 of Waste Licence W0240-01, AES are required to submit a Decommissioning Management Plan for the Nenagh facility to the EPA.

The objective of this Decommissioning Management Plan is to determine a plan for decommissioning, rendering safe or removing for disposal/recovery, any soil, subsoil, building, plant and/or equipment, any waste materials or substances contained therein or there on the site, that may result in environmental contamination or degradation.

The full Decommissioning Management Plan was completed in January 2010 and has been previously submitted to the Agency in the Annual Environmental Report for the year ending 2009.

8.0 ENVIRONMENTAL LIABILITIES

AES (Ireland) Ltd. is a wholly owned subsidiary of Bord na Móna and has access to the reserves of its parent company.

The environmental liabilities (environmental damage and remedial actions) are those considered to be restricted to the confines of the AES Nenagh facility, 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 Móna 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.

For further details please refer to Decommissioning Management Plan, previously submitted to the Agency in the Annual Environmental Report for the year 2009.

8.1 Environmental Liabilities Risk Assessment Review

The Environmental Liabilities Risk Assessment Report was completed and submitted to the Agency in April 2011.

9.0 INCIDENTS & COMPLAINTS

9.1 Complaints Summary

No complaints were made to the site in 2011.

9.2 Reported Incidents Summary

All environmental incidents are recorded at the facility. Eight incidents were recorded by the site during the 2011 reporting period. Summary details are presented in Table 9.1

Table 9.1: Summary of Incidents

Date	Incident Summary Details
05/04/2011 EPA Ref: W0240-01/nc04db.docx	Eight Non-compliances recorded during EPA site visit: ➢ Install appropriate infrastructure for the isolation of the underground sump & provide details to the Agency. Include the three chamber underground sump in the weekly inspection schedule. ➢ Ensure the fire escape door on the northeast corner of the waste transfer building is kept closed at all times. ➢ Provide details of the appropriate disposal of cosmetics waste. ➢ Amend the daily inspection records sheet to ensure the person carrying out the daily site inspections signs the sheet. ➢ Devise an SOP for the regular cleaning of the oil filters in the on-site oil-interceptor. Records of the maintenance of the oil interceptor should be kept onsite. ➢ Review the location of dust monitoring D3 and consider a monitoring location that will more accurately represent dust emissions from the site. ➢ Submit a specified engineering works proposal for the installation of the concrete kerbing. ➢ Revise the energy efficiency audit report. All the above non-compliances were addressed, with corrective action outlined, in correspondence from AES on 20th April 2011.

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 Procedure 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 for the following:

- EP-ERP-01_General Emergency Preparedness & Response.doc
- EP-ERP-02_Spill Clean Up Procedure.doc
- EP-ERP-03_Fire Explosion Procedure.doc
- EP-ERP-04_Malicious Damage Procedure.doc
- EP-ERP-05_Unforeseen Emergencies & Fugitive Emissions.doc
- EPL 5.1 EMERGENCY CONTACT LIST.doc

These documents were previously submitted to the Agency in the Annual Environmental Report for the year 2010.

10.0 FACILITY MANAGEMENT

10.1 Management & Staffing Structure

The Environmental Organisation and the Site organisations structure for the site are presented in Figure 10.1 and 10.2.

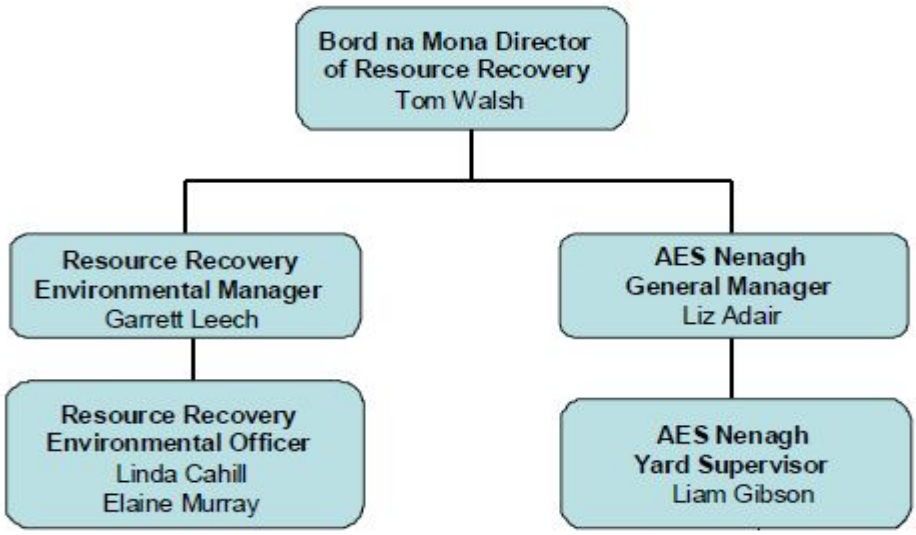


Figure 10.1: Environmental Organisation Structure

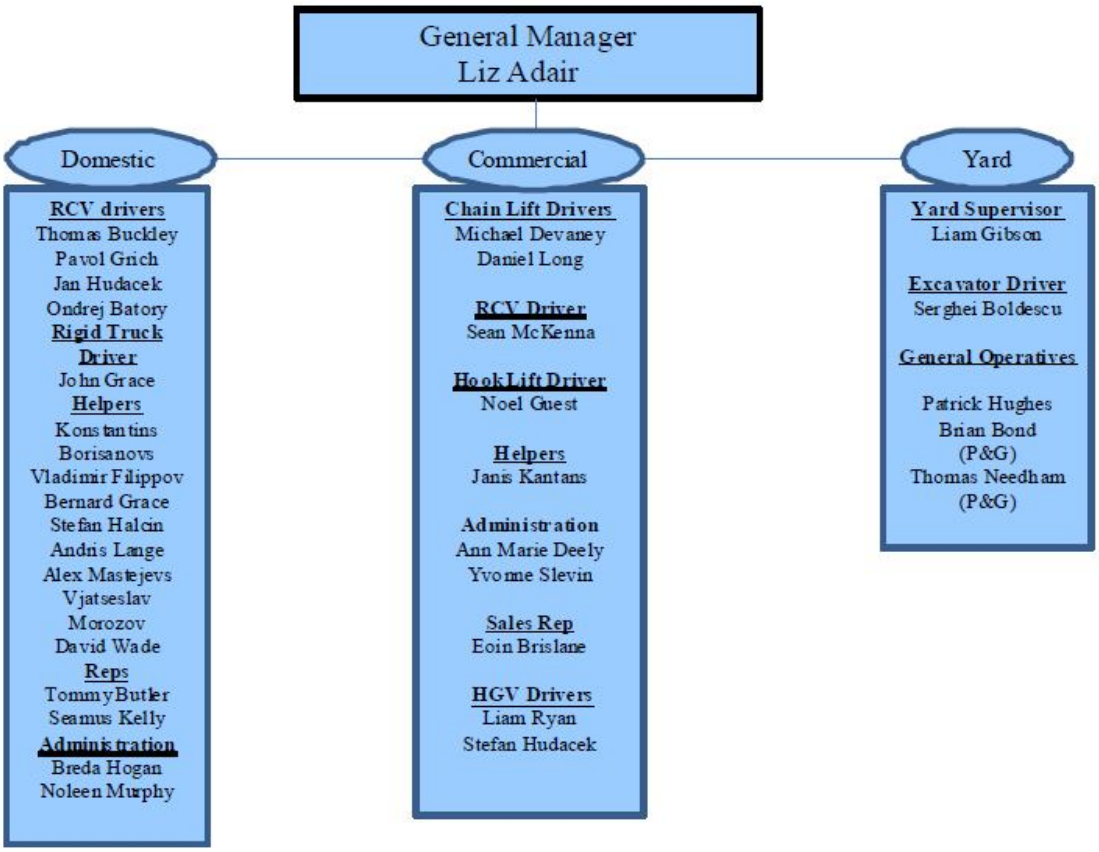


Figure 10.2: AES Nenagh Organisation Chart

10.2 Public Information Programme

A Public Information Program is in place for the site, namely EP 16.0 Programme for Public Information. The full details are included in the Annual Environmental Report for 2010.

10.3 Procedures Developed During 2011

Since the EPA issued Advanced Environmental Solutions (Ireland) Ltd. with a Waste Licence for its Waste Transfer Station at Springfort Cross, Nenagh, Co. Tipperary on 29th July 2009, a new Environmental Management System was established for AES Nenagh in 2009 and received ISO14001 certification on the 14th of January, 2010.

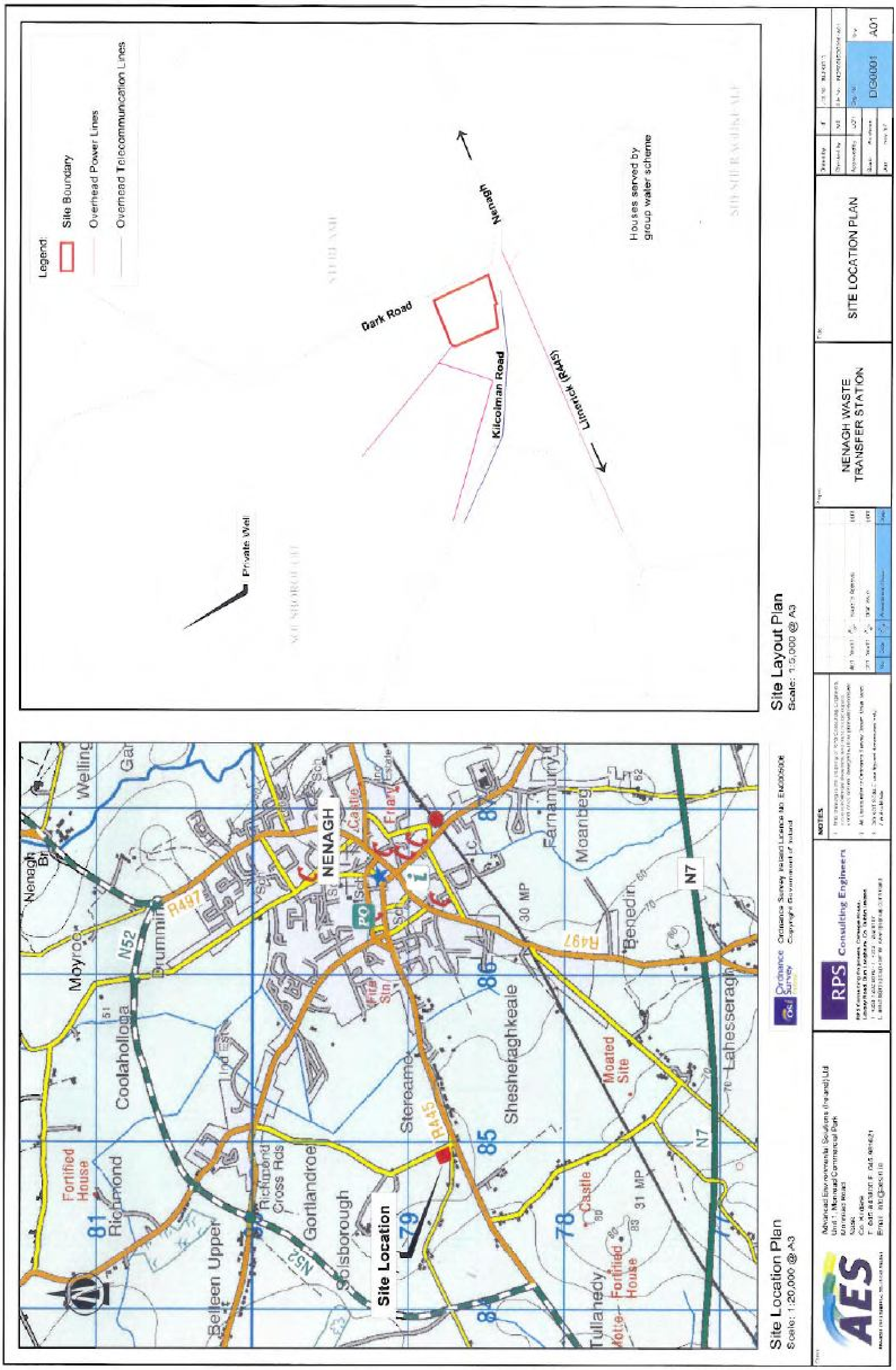
10.4 Review of Nuisance Controls

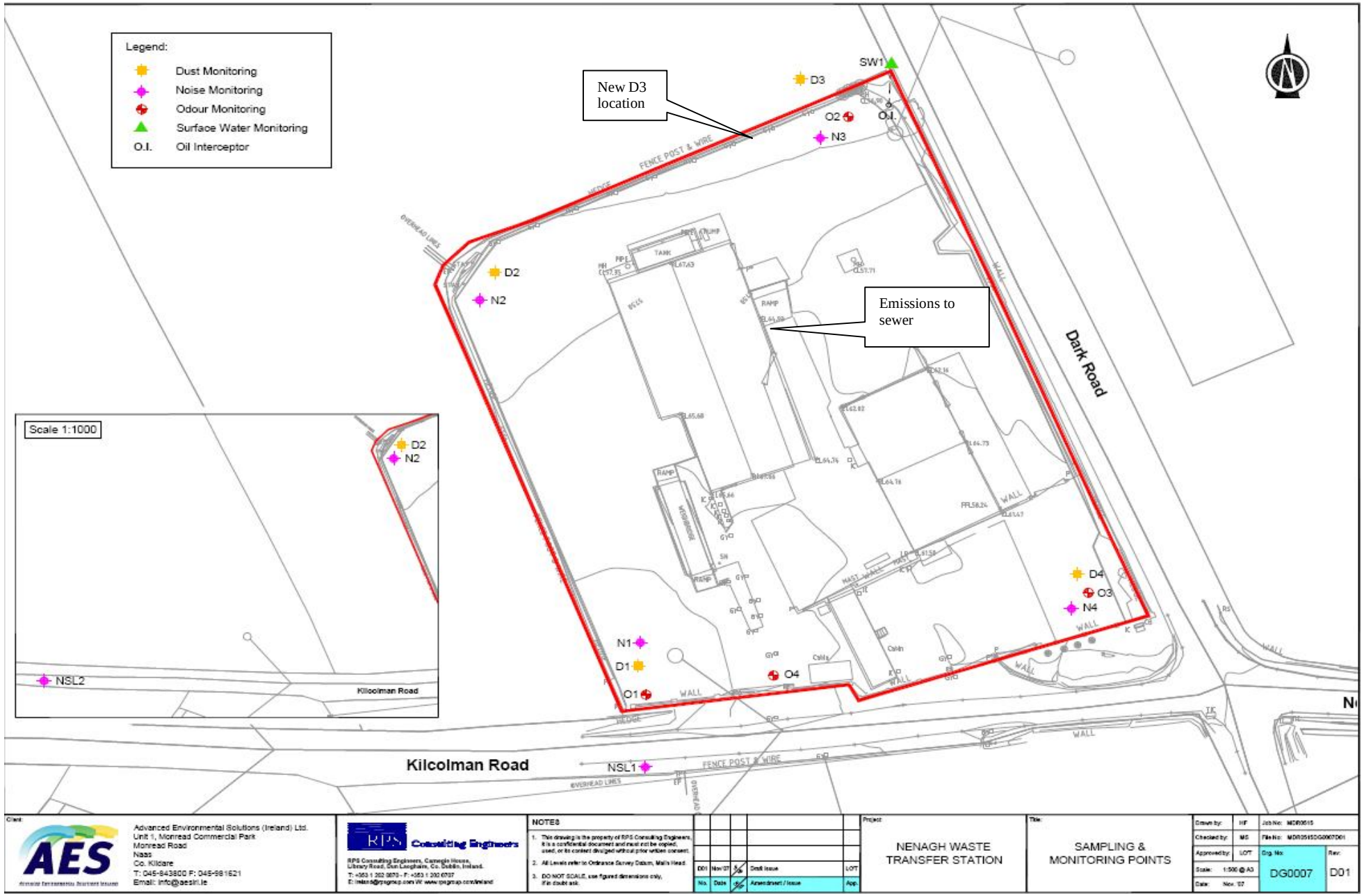
There are no nuisance/pest issues to report in 2011. AES Nenagh have a vermin control procedure in place, (Reference - WI 2.0 Site Inspection Procedure) with an associated Daily Environmental Nuisance Inspection Form (Reference - EWIF 2.2 Daily Environmental Nuisance Inspection Form). The full Procedure is included in the 2010 Annual Environmental Report submitted to the Agency in March 2011.

There are no proposed amendments for 2012 to nuisance controls.

APPENDIX 1

Drawings


Legend:
Site Boundary
Overhead Power Lines
Overhead Telecommunication Lines
Dark Road
Nenagh
Houses served by group water scheme
Kilcolman Road
Limerick (R445)
Private Well
Site Layout Plan
Scale: 1:5,000 @ A3
Site Location Plan
Scale: 1:20,000 @ A3
Site Location
NENAGH
N52
N7
R445
R497
RPS Consulting Engineers
NENAGH WASTE TRANSFER STATION
SITE LOCATION PLAN
DG0001
A01


Legend:
Dust Monitoring
Noise Monitoring
Odour Monitoring
Surface Water Monitoring
O.I. Oil Interceptor
New D3 location
Emissions to sewer
Scale 1:1000
D1
D2
D3
D4
N1
N2
N3
N4
O1
O2
O3
O4
SW1
NSL1
NSL2
Dark Road
Kilcolman Road
Advanced Environmental Solutions (Ireland) Ltd.
Unit 1, Monread Commercial Park
Monread Road
Naas
Co. Kildare
T: 045-843800 F: 045-981621
Email: info@aesirl.ie
RPS Consulting Engineers
NOTES
1. This drawing is the property of RPS Consulting Engineers. It is a confidential document and must not be copied, used, or its content divulged without prior written consent.
2. All Levels refer to Ordnance Survey Datum, Malin Head.
3. DO NOT SCALE, use figured dimensions only, if in doubt ask.
Draft Issue
Amendment / Issue
NENAGH WASTE TRANSFER STATION
SAMPLING & MONITORING POINTS
DG0007
D01

APPENDIX 2

Summary of Emissions and Waste Management

Sheet : Facility ID Activities AER Returns Workbook 13/2/2012 15:39

| PRTR# : W0240 | Facility Name : Advanced Environmental Solutions (Ireland) Limited | Filename : W0240_2011(1).xls | Return Year : 2011 |

Guidance to completing the PRTR workbook

AER Returns Workbook

Version 1.1.13

REFERENCE YEAR	2011

1. FACILITY IDENTIFICATION

Parent Company Name	Advanced Environmental Solutions (Ireland) Ltd.
Facility Name	Advanced Environmental Solutions (Ireland) Limited
PRTR Identification Number	W0240
Licence Number	W0240-01

Waste or IPPC Classes of Activity

No.	class_name
3.13	Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.

Address 1	Solsborough
Address 2	Springfort Cross
Address 3	Nenagh
Address 4	Co. Tipperary
	Tipperary
Country	Ireland
Coordinates of Location	-8.22389 52.85971
River Basin District	IEGBNISH
NACE Code	3900
Main Economic Activity	Remediation activities and other waste management services
AER Returns Contact Name	Charlotte Greene
AER Returns Contact Email Address	Charlotte.Greene@bnm.ie
AER Returns Contact Position	Environmental Officer
AER Returns Contact Telephone Number	045-439492
AER Returns Contact Mobile Phone Number	087-7697465
AER Returns Contact Fax Number	
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	0
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(c)	Installations for the disposal of non-hazardous waste

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

Sheet : Treatment Transfers of Waste AER Returns Workbook 29/3/2012 12:7

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE

Please enter all quantities on this sheet in Tonnes

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used M/C/E	Method Used	Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
Within the Country	13 05 07	Yes	8.06	oily water from oil/water separators	D1	M	Volume Calculation	Offsite in Ireland	ENVA Ireland Ltd.,W0184-01	Clonminam Industrial Estate,Portlaoise,Co. Laois, ,Ireland	ENVA Ireland Ltd.,W0184-01,Clonminam Industrial Estate,Portlaoise,Co. Laois, ,Ireland	Clonminam Industrial Estate,Portlaoise,Co. Laois, ,Ireland
Within the Country	15 01 01	No	5.72	paper and cardboard packaging	D1	M	Volume Calculation	Offsite in Ireland	AES Tullamore,W0104-02	Coppincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland		
Within the Country	15 01 02	No	46.38	plastic packaging	D1	M	Volume Calculation	Offsite in Ireland	Danelle Recycling Ltd,WP/25/06	Kilnock,Ballon,Co. Carlow, ,Ireland		
Within the Country	15 01 02	No	13.06	plastic packaging	D1	M	Volume Calculation	Offsite in Ireland	Leinster Environmentals,WP 2005/06	Clemont Business Park,Haggardstown,Dundalk ,Co. Louth,Ireland		
Within the Country	15 01 03	No	35.89	wooden packaging	D1	M	Volume Calculation	Offsite in Ireland	Thomas O'Neill (Grain Merchant) Ltd,WP LK 05(a)	16 Upper William Street,Limerick, , ,Ireland		
Within the Country	15 01 07	No	283.12	glass packaging	D1	M	Volume Calculation	Offsite in Ireland	Rehab Glassco Ltd,WFP-KE-06-0357-01	Unit 4 Osberstown Industrial Park,Caragh Road,Naas,Co. Kildare,Ireland		
Within the Country	15 01 07	No	35.9	glass packaging	D1	M	Volume Calculation	Offsite in Ireland	AES Portlaoise,W0194-02	Kyletalesha,Portlaoise,Co. Laois, ,Ireland		
Within the Country	17 02 01	No	73.17	wood	D1	M	Volume Calculation	Offsite in Ireland	Thomas O'Neill (Grain Merchant) Ltd,WP LK 05(a)	16 Upper William Street,Limerick, , ,Ireland		
Within the Country	17 04 07	No	185.84	mixed metals	D1	M	Volume Calculation	Offsite in Ireland	Hegarty Metal Recycling Ltd.,WP 001-2001	Ballysimon Road,Limerick, , ,Ireland		
Within the Country	17 09 04	No	52.48	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	D1	M	Volume Calculation	Offsite in Ireland	John O'Dwyer - Construction Thurles Ltd,WP TN 16	Bord na Crusha,Thurles,Co. Tipperary, ,Ireland		
Within the Country	17 09 04	No	30.92	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	D1	M	Volume Calculation	Offsite in Ireland	David Carroll,WPVTN/126	Boston,Cloughjordan,Co. Tipperary, ,Ireland		
Within the Country	20 01 08	No	113.42	biodegradable kitchen and canteen waste	D1	M	Volume Calculation	Offsite in Ireland	Acorn Recycling,W0249-01	Archerstown Industrial Estate,Thurles,Co. Tipperary, ,Ireland		
Within the Country	20 01 08	No	254.18	biodegradable kitchen and canteen waste	D1	M	Volume Calculation	Offsite in Ireland	AES Portlaoise,W0194-02	Kyletalesha,Portlaoise,Co. Laois, ,Ireland		
Within the Country	**20 01 08**	**No**	66.0	biodegradable kitchen and canteen waste	D1	M	Volume Calculation	Offsite in Ireland	Miltown Composting Ltd,WM-WP-26-03	Miltown More & Moorstown,Fethard,Co. Tipperary, ,Ireland		
Within the Country	20 03 01	No	6083.12	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	Drehid Waste Management Facility,W0201-03	Kilmagh Upper,Carbury,Co. Kildare, ,Ireland		
Within the Country	20 03 01	No	4384.16	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	Kyletalesha Landfill Laois Co. Co.,W0026-03	Clonsoughy,Kyleclonhobert, Co. Laois, ,Ireland		
Within the Country	20 03 01	No	838.66	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	North Tipperary Co. Co - Ballaghveny Landfill,W0078-03	Ballymackey,Nenagh,Co. Tipperary, ,Ireland		
Within the Country	20 03 01	No	1058.58	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	Oxigen Environmental Ltd,W0208-02	Merrywell Industrial Estate,Ballymount Road,Ballymount ,Dublin 22,Ireland		
Within the Country	20 03 01	No	55.78	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	Thorntons Recycling,WCP-DC-09-1199-01	Unit S3B ,Henry Road,Park West Business Park,Dublin,Ireland		
Within the Country	20 03 01	No	569.94	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	Drehid Waste Management Facility,W0201-03	Kilmagh Upper,Carbury,Co. Kildare, ,Ireland		

Sheet : Treatment Transfers of Waste AER Returns Workbook 29/3/2012 12:7

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste : Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste : Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
Within the Country	20 03 01	No	2114.02	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	Kyletalesha Landfill Loais Co. Co.,W0026-03	Clonsoughy,Kylecionhobert, Co. Laois,,,Ireland		
Within the Country	20 03 01	No	2012.24	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	North Tipperary Co. Co - Ballaghveny Landfill,W0078-03	Ballymackey,Nenagh,Co. Tipperary,,,Ireland		
Within the Country	20 03 01	No	45.64	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	Thorntons Recycling,WCP-DC-09-1190-01	Unit S3B ,Henry Road,Park West Business Park,Dublin,Ireland		
Within the Country	20 03 01	No	3715.24	mixed municipal waste	D1	M	Volume Calculation	Offsite in Ireland	AES Tullamore,W0104-02	Cappincur Industrial Estate,Daingean Road,Tullamore,Co. Offaly,Ireland		
Within the Country	20 03 03	No	120.86	street-cleaning residues	D1	M	Volume Calculation	Offsite in Ireland	Drehid Waste Management Facility,W0201-03	Killinagh Upper,Carbury,Co. Kildare,,,Ireland		
Within the Country	20 03 07	No	97.1	bulky waste	D1	M	Volume Calculation	Offsite in Ireland	Thorntons Recycling,WCP-DC-09-1190-01	Unit S3B ,Henry Road,Park West Business Park,Dublin,Ireland		

* Select a row by double clicking the Description of Waste then click the delete button