

## Attachment I.1 Assessment of Atmospheric Emissions

### Dust

The only significant emission to air from the activity is dust. As all of the wastes are processed internally the primary source of dust emissions to air is vehicle movements on the hardstanding areas.

The assessment of impacts of the facility on air quality is based on the results of the dust monitoring conducted in 2011 and 2012. The monitoring is carried out three times a year at the four dust monitoring location (D1, D2, D3 and D4) as specified in the Licence and shown on Drawing 1. The results for 2011 and those available for 2012 are shown in Table I.1.1

**Table I.1.1 Dust Monitoring Results 2011 and 2012**

Report Reference:		ECS 3819	ECS 3929	ECS 3979	ECS 4123	ECS 4124	ECS 4125
Monitoring Location	Depositional Dust Limit	Q1 2011	Q2 2011	Q3 2011	Q1 2012	Q2 2012	Q3 2012
D1	350	134	167	189	197	280	178
D2	350	290	544	189	166	463	191
D3	350	93	217	78	61	226	160
D4	350	134	2704	128	43	500	61

There were no exceedances of the deposition limit in the Q1 and Q3 2011 monitoring events. During the Q2 2011 event, the deposition limit was exceeded at location D2 (544 mg/m<sup>2</sup>/day) and D4 (2,704mg/m<sup>2</sup>/day). The exceedance at D2 was attributed to passing traffic on the Tullamore Bypass (120m approx.) and Tullamore Daingean Road (12m approx). At D4, the sample jar was heavily contaminated with green algae growth and the results were not considered representative of site conditions.

In 2012 the dust levels were below the deposition limits at all of the monitoring locations, with the exception of D2 and D4 in Q2 of 2012, where a level of 463mg/m<sup>2</sup>/day and 500mg/m<sup>2</sup>/day respectively were recorded. At D2 the sample jar contained a large content of red solids and moss. At D4 the sample jar contained a large amount of insects and the results were not considered to be representative of site conditions.

The monitoring results indicate that the facility is not a significant source of dust and that the emissions do not present a risk of environmental nuisance. The current mitigation measures, which are described in Attachment E 1 and have been proven to be effective, will continue to be deployed at the facility.

### Odour

The facility has not received any complaints about odours. While the additional wastes will contain materials that are a source of odours, the facility has the capacity to process and remove these materials from the facility as is currently the case. This will ensure that the risk of odour nuisance is minimised.

## **Attachment I.7 Ecology**

A detailed assessment of the ecological conditions within and adjoining the site boundaries formed part of the EIA carried out in 2008 during the preparation of the original Licence application. No habitats of high ecological importance were identified, and it was established no designated sites in the vicinity of the facility would be impacted by the proposed development.

As the proposed changes will not require any excavations within the site boundary and will not result in any new or altered emissions, they will have no impact on the local ecological conditions. A Natura Impact Statement Stage 1 Screening Assessment, a copy of which is in Attachment B3, confirmed that the proposed changes will not have any impact on any Natura 2000 sites.

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## Attachment 1.6 Noise Impact

The facility is located at the western end of an Industrial Estate and the primary road access is off the nearby N 52 By-Pass. The closest noise sensitive location, (NSL) is a filling station located on the Daingean Road, approximately 150m from the facility. The assessment of the noise impacts from the facility is based on the results of the noise monitoring conducted in 2011.

The monitoring was carried out three times a year at the five monitoring location (N1, N2, N3 and DN4, NSL ) as specified in the Licence and shown on Drawing 1. In 2011, the Agency agreed to reduce the monitoring frequency to annual and the 2012 monitoring event was not completed at the time this application was prepared. The results for 2011 are shown in Table I.6.1

**Table I.6.1 Noise Monitoring 2011**

Report ref:		ECS381 9	ECS3929	ECS3979
		6 <sup>th</sup> Jan 2011	21 <sup>st</sup> April 2011	15 <sup>th</sup> July 2011
Location	Duration (minutes)			
N1	30	64	60	60
N2	30	62	61	60
N3	30	51	57	56
N4	30	55	62	61
NSL	30	55	51	52

Noise levels exceeding 55 dB(A) were recorded at locations N1 & N2 in all monitoring events. As these locations are to the front of the facility, the primary cause of these exceedances was heavy traffic on the nearby Tullamore Bypass and the Daingean Road. Noise levels exceeding 55 dB(A) were recorded at locations N3 & N4, which are situated at the rear of the site. The primary contributing sources were traffic entering/exiting the rear of the site, traffic on the Tullamore Bypass and dogs barking in the nearby Dog Pound.

The dominant source of noise detected at the NSL was passing traffic (cars, vans, jeeps and lorries) and activities at the AES facility were not audible at this location. Tonal noise was not detected during any of the monitoring events.

The proposed changes to the amounts of waste will result in any new sources of noise emissions. There will be an increase in traffic movements but these will occur within the normal operational hours and will not result in any increase in noise levels.

**Attachment I.5      Ground or Groundwater Contamination**

This facility has already been constructed and is operational. The proposed development is predominantly in relation to waste acceptance at the facility. There will therefore, be no additional impacts on the site geology or hydrogeology.

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## Attachment I.4 Assessment of Impact on Ground and Groundwater

The hydrogeological characteristics of the region are strongly influenced by the Variscan fold system along approximate northeast-southwest trends. The principal aquifers (“Regionally Important Aquifers”) of the region are the pure shallow marine Lower Carboniferous (Lower Dinantian) limestones which occupy the synclinal valleys of the region. The permeability of the aquifers depends almost entirely on their fracturing. Within the limestones, the permeability has been further enhanced by enlargement of the fractures by karstification and dolomitisation.

The site is underlain by a “Locally Important Aquifer (LI)” which is “moderately productive in local zones only”. A “Regionally Important Aquifer” is located some 500 m west of the site within the pure limestones of the Lower Dinantian.

Water in limestone aquifers is always hard (usually over 250 mg/l CaCO<sub>3</sub> and often over 300 mg/l CaCO<sub>3</sub>)

The assessment of the impact of the facility on ground and groundwater is based on the results of the groundwater monitoring conducted in 2011 and 2012. The monitoring is carried out three times a year at location (SW-1) specified in the Licence and shown on Figure ? The results for 2011 and those available for 2012 are shown in Table I 2 1

### GW1 2011

GW1 was not sampled as the well was damaged, A new well was drilled February 2012 for sampling.

### GW2 2011

Report Reference	ECS3819	ECS3929	ECS3979	ECS4027
Parameter	Q1 2011	Q2 2011	Q3 2011	Q4 2012
Ph (Ph Units)	7.4	7.42	7.34	7.4
Temperature (C)	11	10.2	11	12.1
Odour	Faint	Faint	none	none
Conductivity	627	646	721	580
Ammonia as N	0.12	0.14	0.11	0.08
DRO	<10	<10	<10	<10
Mineral Oil	-	-	<10	<10

## GW3 2011

<b>Report Reference</b>	<b>ECS3819</b>	<b>ECS3929</b>	<b>ECS3979</b>	<b>ECS4027</b>
<b>Parameter</b>	<b>Q1 2011</b>	<b>Q2 2011</b>	<b>Q3 2011</b>	<b>Q4 2012</b>
<b>Ph (Ph Units)</b>	7.4	7.47	7.37	7.3
<b>Temperature (C)</b>	11.5	11.7	13.8	12
<b>Odour</b>	None	None	none	none
<b>Conductivity</b>	593	543	539	537
<b>Ammonia as N</b>	0.05	0.06	0.03	0.02
<b>DRO</b>	<10	<10	<10	<10
<b>Mineral Oil</b>	-	-	<10	<10

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**Attachment I.3      Sewer**

Not applicable

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## Attachment I.2 Surface Water

Stormwater run-off from the facility discharges via silt traps and an oil interceptor to a tributary of the Tullamore River. The Tullamore River is 750m south of the site and, as it flows west to join the River Brosna, it passes through the northern section of the Charleville Wood Special Area of Conservation.

The assessment of the impact of the facility on surface water is based on the results of the surface water monitoring conducted in 2011 and 2012. The monitoring is carried out three times a year at location (SW-1) specified in the Licence and shown on Drawing 1. The results for 2011 and those available for 2012 are shown in Table I 2 1

**Table I.2.1 Surface Water Monitoring Results 2011 and 2012**

Report ref:	ECS3819	ECS3959	ECS3979	ECS402 7	ECS4123	ECS 4124	ECS 4125	
Parameter	Q1 2011	Q2 2011	Q3 2011	Q4 2011	Q1 2012	Q2 2012	Q3 2012	ELV
pH(ph units)	7.5	7.72	7.7	7.57	7.3	7.5	7.53	6-9
Conductivity	544	446	375	654	559		757	-
Odour	None	None	None	Slight	None	None	None	-
BOD	<2	<2	3	4	<2	<2	2	5
COD	16	16	<10	23	11	12	47	-
Suspended Solids	36	<5	<5	5	7	<5	28	25
Ammonia as N	0.93	0.12	0.79	1.02	1.24	0.83	0.73	1
Chloride	42	22	36	34	35	32	<0.010	250
Mineral Oil	<10	<10	<10	<10	>10	<0.010	<0.010	5

- No ELV assigned

In Q1 2011 the suspended solids (36mg/l) was slightly above the Emission Limit Value (ELV). In Q4 of 2011 the ammonia level slightly exceeded the ELV. All of the other parameters were below their respective ELVs. In 2012 the only exceedance with an ELV occurred in Q1, where the ammonia level exceeded the ELV. Subsequent monitoring in Q2 and Q3 confirmed the ammonia levels were below the ELVs.

The results confirm that surface water emissions from the facility predominantly comply with the ELVs and do not present any significant risk to the receiving surface water body. The proposed changes to the amounts of waste accepted at the facility will not result in any changes to the either the quality or volume of the surface water emissions from the facility and therefore there is not need for additional mitigation measures.

A Natura 2000 Screening Assessment concluded that the proposed changes to the amounts of waste accepted at the facility would not have any significant impact on the Charleville Wood SAC. A copy of the Screening Assessment report is in Attachment L1.



## **Traffic Generated Emissions**

The forecast traffic generation is expected to have the potential to generate an average of 19No. vehicle trips per week day. Potential increased emissions of pollutants (primarily Nitrous oxides, particulates and hydrocarbons) from additional traffic are not considered to be significant in the context of the existing traffic volumes using the N52 By-Pass.

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