

Independent Analytical Supplies

Test Report

LABORATORIES
Lab Report Number: 2229F01

Analysis Number: 99A/56906

Customer ID: ENVI.C1
Contact Name: JIM DOWDALL
Company Name: ENVIROGUIDE CONSULTING
Address: 93 UPPER GEORGES STREET
DUN LAOGHAIRE
CO. DUBLIN

Analysis Type: Misc. Tests (99A)
Delivery By: Customer
Sample Card Number: 7665/3
Sample Condition: Acceptable

Sample Type: Surface Water
Sample Reference: O'TOOLE COMPOSTING
Sample Description: SW1

Date Sample Received: 20/01/2012
Date Analysis Commenced: 20/01/2012
Date Certificate Issued: 27/01/2012

Parameter	Method	Result	Unit
Chemical Oxygen Demand	Oxygen Meter SOP 2006	2	mg/l
Chemical Oxygen Demand	Microdigestion and Colourimetry SOP 2005	21	mg/l
Ammonia	Colourimetry SOP 2013	<0.01	mg/l
pH	Electrometry SOP 2004	7.7	pH units
Total Suspended Solids	Gravimetric/Dry @ 105°C SOP 2016	3	mg/l

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Signed: Wendy McCall
Wendy McCall - Laboratory Manager

Date: 27/1/12

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Appendix to Reports / Quotations

Parameter	Method Used	Range	Limit of Detection
pH of Soil / Water	Hydrogen ion selective electrode	pH 4 – 10	4 pH units
SMP pH of Soil	Hydrogen ion selective electrode	pH 4 – 10	4 pH units
Organic Matter – Soil	Furnace	0.1 – 99.9%	0.1%
Morgans Phosphorus – Soil	Extraction / Colourimetry	1 – 20 mg/l	1 mg/l
Morgans Potassium - Soil	Extraction / Flame Photometry	25 – 200 mg/l	25 mg/l
COD – Low Range	Digestion / Colourimetry	1 – 150 mg/l	1 mg/l
COD – High Range	Digestion / Colourimetry	50 – 5000 mg/l	50 mg/l
BOD	DO Probe	1 – 1000 mg/L	1 mg/l
Ammonia	Colourimetry	0.01 mg/l to 0.61 mg/l	0.01 mg/l
Total Suspended Solids	Gravimetric	1mg/l to 1000mg/l	1 mg/l
Alkalinity	Titration	10mg/l - 800 mg/l	10 mg/l
Chloride	Titration	2 mg/l – 100 mg/l	2 mg/l
Sulphate	Colourimetry	5mg/l to 70mg/l	5 mg/l
Ortho Phosphate	Spectrophotometry	0.05mg/l -1.00mg/l	0.05 mg/l
Conductivity	Electrometry	1µscm ⁻¹ -1999 µscm ⁻¹	1µS/cm
Calcium, Magnesium, Sodium, Potassium (Potable Water)	ICP-MS	0.5 - 200mg/l	0.5 mg/l
Iron, Aluminium (Potable Water)	ICP-MS	20 - 500µg/l	20 µg/l
Manganese, Chromium (Potable Water)	ICP-MS	5 - 500µg/l	5 µg/l
Copper, Zinc (Potable Water)	ICP-MS	10 - 500µg/l	10 µg/l
Lead (Potable Water)	ICP-MS	1 - 100µg/l	1 µg/l
Nickel (Potable Water)	ICP-MS	2 - 100µg/l	2 µg/l
Cadmium (Potable Water)	ICP-MS	0.5 - 100µg/l	0.5 µg/l
Calcium, Magnesium, Sodium, Potassium (Other Water*)	ICP-MS	2 – 200mg/l	2 mg/l
Iron, Aluminium, Manganese, Copper, Zinc, Lead, Nickel, Chromium, Cadmium (Other Water*)	ICP-MS	20 - 2000µg/l	20 µg/l

* - Other water – Surface Water, Ground Water, Borehole Water, Effluent and Trade Waters.

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Independent Analytical Supplies

Test Report

Lab Report Number: 2229F02

Analysis Number: 99A/56907

Customer ID: ENVI.C1
 Contact Name: JIM DOWDALL
 Company Name: ENVIROGUIDE CONSULTING
 Address: 93 UPPER GEORGES STREET
 DUN LAOGHAIRE
 CO. DUBLIN

Analysis Type: Misc. Tests (99A)
 Delivery By: Customer
 Sample Card Number: 7665/3
 Sample Condition: Acceptable

Sample Type: Surface Water
 Sample Reference: O'TOOLE COMPOSTING
 Sample Description: SW2

Date Sample Received: 20/01/2012
 Date Analysis Commenced: 20/01/2012
 Date Certificate issued: 27/01/2012

Parameter	Method	Result	Unit
Chemical Oxygen Demand	Oxygen Meter SOP 2006	2	mg/l
Chemical Oxygen Demand	Microdigestion and Colourimetry SOP 2005	18	mg/l
Ammonia	Colourimetry SOP 2013	<0.01	mg/l
pH	Electrometry SOP 2004	7.9	pH units
Total Suspended Solids	Gravimetric/Dry @ 105°C SOP 2016	<1	mg/l

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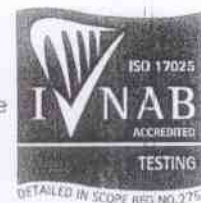
Signed: Wendy McCall

Date: 27/1/12

Wendy McCall - Laboratory Manager

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Appendix to Reports / Quotations

Parameter	Method Used	Range	Limit of Detection
pH of Soil / Water	Hydrogen ion selective electrode	pH 4 – 10	4 pH units
SMP pH of Soil	Hydrogen ion selective electrode	pH 4 – 10	4 pH units
Organic Matter – Soil	Furnace	0.1 – 99.9%	0.1%
Morgans Phosphorus – Soil	Extraction / Colourimetry	1 – 20 mg/l	1 mg/l
Morgans Potassium - Soil	Extraction / Flame Photometry	25 – 200 mg/l	25 mg/l
COD – Low Range	Digestion / Colourimetry	1 – 150 mg/l	1 mg/l
COD – High Range	Digestion / Colourimetry	50 – 5000 mg/l	50 mg/l
BOD	DO Probe	1 – 1000 mg/L	1 mg/l
Ammonia	Colourimetry	0.01 mg/l to 0.61 mg/l	0.01 mg/l
Total Suspended Solids	Gravimetric	1mg/l to 1000mg/l	1 mg/l
Alkalinity	Titration	10mg/l - 800 mg/l	10 mg/l
Chloride	Titration	2 mg/l – 100 mg/l	2 mg/l
Sulphate	Colourimetry	5mg/l to 70mg/l	5 mg/l
Ortho Phosphate	Spectrophotometry	0.05mg/l -1.00mg/l	0.05 mg/l
Conductivity	Electrometry	1µscm ⁻¹ -1999 µscm ⁻¹	1µS/cm
Calcium, Magnesium, Sodium, Potassium (Potable Water)	ICP-MS	0.5 - 200mg/l	0.5 mg/l
Iron, Aluminium (Potable Water)	ICP-MS	20 - 500µg/l	20 µg/l
Manganese, Chromium (Potable Water)	ICP-MS	5 - 500µg/l	5 µg/l
Copper, Zinc (Potable Water)	ICP-MS	10 - 500µg/l	10 µg/l
Lead (Potable Water)	ICP-MS	1 - 100µg/l	1 µg/l
Nickel (Potable Water)	ICP-MS	2 - 100µg/l	2 µg/l
Cadmium (Potable Water)	ICP-MS	0.5 - 100µg/l	0.5 µg/l
Calcium, Magnesium, Sodium, Potassium (Other Water*)	ICP-MS	2 – 200mg/l	2 mg/l
Iron, Aluminium, Manganese, Copper, Zinc, Lead, Nickel, Chromium, Cadmium (Other Water*)	ICP-MS	20 - 2000µg/l	20 µg/l

* - Other water – Surface Water, Ground Water, Borehole Water, Effluent and Trade Waters.

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Test Report

Lab Report Number: 1900F01

Analysis Number: 99A/56253

Customer ID: ENVI.C1
 Contact Name: JIM DOWDALL
 Company Name: ENVIROGUIDE CONSULTING
 Address: 93 UPPER GEORGES STREET
 DUN LAOGHAIRE
 CO. DUBLIN

Analysis Type: Misc. Tests (99A)
 Delivery By: Customer
 Sample Card Number: 6930/1
 Sample Condition: Acceptable

Sample Type: Ground Water
 Sample Reference: O'TOOLE COMPOSTING
 Sample Description: WELL WATER

Date Sample Received: 05/01/2012
 Date Analysis Commenced: 05/01/2012
 Date Certificate Issued: 17/01/2012

Parameter	Method	Result	Unit
Arsenic*	Colourimetry SOP 2013	<0.01	mg/l
Calcium	ICP-MS	<2	mg/l
Chloride	Colourimetry SOP 2019	42	mg/l
Conductivity	Electrometry SOP 2003	686	µS/cm 20°C
Copper	ICP-MS	27	ug/l
Iron	ICP-MS	22	ug/l
Total Hardness	Ca & Mg Hardness	13.2	mg/l CaCO ₃
Magnesium	ICP-MS	<2	mg/l
Manganese	ICP-MS	<20	ug/l
Nitrite*	Konelab Aquakem SOP 2059	<0.01	mg/l
Nitrate*	Konelab Aquakem SOP 2060	49.98	mg/l
Lead	ICP-MS	<20	ug/l
Turbidity*	Turbidimetric	<1	F.T.U.
Zinc	ICP-MS	42	ug/l
pH	Electrometry SOP 2004	7.3	pH units

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Signed: W. McCall
Wendy McCall - Laboratory Manager

Date: 17/01/12

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Parameter	Method Used	Range	Limit of Detection
pH of Soil / Water	Hydrogen ion selective electrode	pH 4 – 10	4 pH units
SMP pH of Soil	Hydrogen ion selective electrode	pH 4 – 10	4 pH units
Organic Matter – Soil	Furnace	0.1 – 99.9%	0.1%
Morgans Phosphorus – Soil	Extraction / Colourimetry	1 – 20 mg/l	1 mg/l
Morgans Potassium - Soil	Extraction / Flame Photometry	25 – 200 mg/l	25 mg/l
COD – Low Range	Digestion / Colourimetry	1 – 150 mg/l	1 mg/l
COD – High Range	Digestion / Colourimetry	50 – 5000 mg/l	50 mg/l
BOD	DO Probe	1 – 1000 mg/L	1 mg/l
Ammonia	Colourimetry	0.01 mg/l to 0.61 mg/l	0.01 mg/l
Total Suspended Solids	Gravimetric	1mg/l to 1000mg/l	1 mg/l
Alkalinity	Titration	10mg/l - 800 mg/l	10 mg/l
Chloride	Titration	2 mg/l – 100 mg/l	2 mg/l
Sulphate	Colourimetry	5mg/l to 70mg/l	5 mg/l
Ortho Phosphate	Spectrophotometry	0.05mg/l -1.00mg/l	0.05 mg/l
Conductivity	Electrometry	1µscm ⁻¹ -1999 µscm ⁻¹	1µS/cm
Calcium, Magnesium, Sodium, Potassium (Potable Water)	ICP-MS	0.5 - 200mg/l	0.5 mg/l
Iron, Aluminium (Potable Water)	ICP-MS	20 - 500µg/l	20 µg/l
Manganese, Chromium (Potable Water)	ICP-MS	5 - 500µg/l	5 µg/l
Copper, Zinc (Potable Water)	ICP-MS	10 - 500µg/l	10 µg/l
Lead (Potable Water)	ICP-MS	1 - 100µg/l	1 µg/l
Nickel (Potable Water)	ICP-MS	2 - 100µg/l	2 µg/l
Cadmium (Potable Water)	ICP-MS	0.5 - 100µg/l	0.5 µg/l
Calcium, Magnesium, Sodium, Potassium (Other Water*)	ICP-MS	2 – 200mg/l	2 mg/l
Iron, Aluminium, Manganese, Copper, Zinc, Lead, Nickel, Chromium, Cadmium (Other Water*)	ICP-MS	20 - 2000µg/l	20 µg/l

* - Other water – Surface Water, Ground Water, Borehole Water, Effluent and Trade Waters.

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Test Report

Lab Report Number: 2229F03 Analysis Number: 99A/56908

Customer ID:	ENVI.C1	Analysis Type:	Misc. Tests (99A)
Contact Name:	JIM DOWDALL	Delivery By:	Customer
Company Name:	ENVIROGUIDE CONSULTING	Sample Card Number:	7665/3
Address:	93 UPPER GEORGES STREET DUN LAOGHAIRE CO. DUBLIN	Sample Condition:	Acceptable
Sample Type:	Drinking Water	Date Sample Received:	20/01/2012
Sample Reference:	OTOOLE COMPOSTING	Date Analysis Commenced:	20/01/2012
Sample Description:	WELL WATER	Date Certificate Issued:	31/01/2012

Parameter	Method	Result	Unit
Fecal Coliforms	Membrane Filtration SOP 2038	0	cfu/100 ml
Total Coliforms	Membrane Filtration SOP 2037	0	cfu/100 ml

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Signed: Wendy McCall
Wendy McCall - Laboratory Manager

Date: 31/1/12

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Appendix to Reports / Quotations

Parameter	Method Used	Range	Limit of Detection
pH of Soil / Water	Hydrogen ion selective electrode	pH 4 – 10	4 pH units
SMP pH of Soil	Hydrogen ion selective electrode	pH 4 – 10	4 pH units
Organic Matter – Soil	Furnace	0.1 – 99.9%	0.1%
Morgans Phosphorus – Soil	Extraction / Colourimetry	1 – 20 mg/l	1 mg/l
Morgans Potassium – Soil	Extraction / Flame Photometry	25 – 200 mg/l	25 mg/l
COD – Low Range	Digestion / Colourimetry	1 – 150 mg/l	1 mg/l
COD – High Range	Digestion / Colourimetry	50 – 5000 mg/l	50 mg/l
BOD	DO Probe	1 – 1000 mg/L	1 mg/l
Ammonia	Colourimetry	0.01 mg/l to 0.61 mg/l	0.01 mg/l
Total Suspended Solids	Gravimetric	1mg/l to 1000mg/l	1 mg/l
Alkalinity	Titration	10mg/l - 800 mg/l	10 mg/l
Chloride	Titration	2 mg/l – 100 mg/l	2 mg/l
Sulphate	Colourimetry	5mg/l to 70mg/l	5 mg/l
Ortho Phosphate	Spectrophotometry	0.05mg/l -1.00mg/l	0.05 mg/l
Conductivity	Electrometry	1 μ scm ⁻¹ -1999 μ scm ⁻¹	1 μ S/cm
Calcium, Magnesium, Sodium, Potassium (Potable Water)	ICP-MS	0.5 - 200mg/l	0.5 mg/l
Iron, Aluminium (Potable Water)	ICP-MS	20 - 500 μ g/l	20 μ g/l
Manganese, Chromium (Potable Water)	ICP-MS	5 - 500 μ g/l	5 μ g/l
Copper, Zinc (Potable Water)	ICP-MS	10 - 500 μ g/l	10 μ g/l
Lead (Potable Water)	ICP-MS	1 - 100 μ g/l	1 μ g/l
Nickel (Potable Water)	ICP-MS	2 - 100 μ g/l	2 μ g/l
Cadmium (Potable Water)	ICP-MS	0.5 - 100 μ g/l	0.5 μ g/l
Calcium, Magnesium, Sodium, Potassium (Other Water*)	ICP-MS	2 – 200mg/l	2 mg/l
Iron, Aluminium, Manganese, Copper, Zinc, Lead, Nickel, Chromium, Cadmium (Other Water*)	ICP-MS	20 - 2000 μ g/l	20 μ g/l

* - Other water – Surface Water, Ground Water, Borehole Water, Effluent and Trade Waters.

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 - the interpretation of the result of this test report and/or the application of the results as stated and/or the accuracy and the reliability of any veterinary, farm management or other advice based thereon; and
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Independent Analytical Supplies

Supplementary Test Report

Lab Report Number: 8333E01		Analysis Number: 99A/52789	
Customer ID:	O'TOOO.C1	Analysis Type:	Misc. Tests (99A)
Contact Name:	LORRAINE MC ASSEY	Delivery By:	Customer
Company Name:	O'TOOLE COMPOSTING LTD	Sample Card Number:	0279/1
Address:	BALLINTRANE FENAGH CO. CARLOW	Sample Condition:	Acceptable
Sample Type:	Compost	Date Sample Received:	20/12/2010
Sample Reference:	COMPOST SAMPLE	Date Analysis Commenced:	20/12/2010
Sample Description:	BED MEDIA	Date Certificate Issued:	24/03/2011

Parameter	Method	Result	Unit
Ammonia*	Steam Distillation & Titration	0.20	%
T.V.C. @ 22°C**	Pour Plate	1100000	cfu/g
pH	Electrometry SOP 2001	7.0	pH units
Dry Matter*	Drying @ 105°C	27.9	%

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Signed: _____

Date: _____

Wendy McCall - Laboratory Manager

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Phone: 00353 59 9721022 Fax: 00353 59 9721897 Email: ias@iaslabs.ie Web: www.iaslabs.ie



Ambient Air Survey

June 2011

O Toole Composting Ltd
Ballintrane, Co Carlow

Permit No: **W1-CW-10-0003-01**

Report Date: **14th July 2011**

In association with IAS Laboratories

Report Number:
3190-11-02
Version **0**

AXIS environmental services

40 Coolraine Heights, Old Cratloe Road, Limerick
Phone 061 324587 (087)6367436
info@axisenv.ie www.axisenv.ie

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Report for the Periodic Monitoring of Ambient Air

Part 1: Executive Summary

Operator: O Toole Composting Limited

Installation: Ballintrane,
Co. Carlow.

Contact Name: Paddy o Toole

Contact No. 086 2647990

Contract Manager: Mark Mc Garry

Monitoring Dates: 02nd June 2011

Monitoring Organisation: AXIS environmental services

Address: 40 Coolrairie Heights,
Old Cratloe Road,
Limerick.

Laboratory: Irish Equine Centre
Johnstown,
Naas,
Co Kildare

Date of Report: 14th July 2011

Report Approved By: Mark Mc Garry

Function: Environmental Manager

Signed: 

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1 Monitoring Results

1.1 Monitoring Objectives

Monitoring was carried out at O Toole Composting Limited to determine the concentrations of a range of parameters the surrounding environment is exposed to as result of composting activities on site. Monitoring was carried out to permit requirements, fulfilling the requirements of Schedule 2, Part 4.3 Ambient Air Monitoring. There were three locations studied as part of this contract, one approximately 150m upwind of the facility, one immediately downwind of the facility and one sample point at the facility site office. The following parameters were complete for each site:

Table 1:

Parameter	Method
PM ₁₀	prEN12341
Aspergillus fumigatus	UK Composting Association Protocol
Total Bacteria	UK Composting Association Protocol
Odour	NIOSH Methods 2542, 6013, 2002 6011
Odour	EP Guidance Document AG5

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Table 2: Summary of Results

Monitoring Area	Substance	Units	Limits	Ambient Concentration	Status
Up Wind of the Installation	PM ₁₀	ug/m ³	50	41	Compliant
	Aspergillus fumigatus	CFU/m ³	500	0	Compliant
	Total Bacteria	CFU/m ³	1000	85	Compliant
Down Wind of the Installation	PM ₁₀	ug/m ³	50	33	Compliant
	Aspergillus fumigatus	CFU/m ³	500	0	Compliant
	Total Bacteria	CFU/m ³	1000	100	Compliant
Facility Offices	PM ₁₀	ug/m ³	50	42	Compliant
	Aspergillus fumigatus	CFU/m ³	500	0	Compliant
	Total Bacteria	CFU/m ³	1000	135	Compliant

1.2 Special Monitoring Requirements

There were no special requirements for sampling and analysis for this project. All sample locations were located within the boundary of the site for worst case scenario results.

1.3 Summary of Equipment

Table 3: Equipment Summary

Item	ID Number	Calibration Status
Pump No 1	AX06	Calibrated On site Before and After Sampling
Pump No 2	AX07	Calibrated On site Before and After Sampling
Pump No 3	AX33	Calibrated On site Before and After Sampling
Defender 510 Calibrator	AX28	Calibration Certificate: 105163
Camera	-	-
PM ₁₀ Sample Heads	AX09	-
PM ₁₀ Sample Heads	AX10	-
PM ₁₀ Sample Heads	AX11	-
Biosampler 1	AX39	Autoclaved and Sterile
Biosampler 2	AX40	Autoclaved and Sterile
Biosampler 3	AX41	Autoclaved and Sterile
Sample Solution	-	Sterile Deionised Water

Table 4: Ambient Gas Concentration Results

Parameter	Method	Result			Units
		Office	Jpwind	Downwind	
Mercaptans	NIOSH 2542	<0.5	<0.5	<0.5	mg/m ³
Hydrogen Sulphide	NIOSH 6013	<0.2	<0.2	<0.2	mg/m ³
Ammonia	NIOSH 2002	<0.25	<0.25	<0.25	mg/m ³
Amines	NIOSH 6016	<0.01	<0.01	<0.01	mg/m ³

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Reference	Site Permit No	Assessment by	Date of Assessment		
O Toole Composting	WFP-CW-10-0003-01	Mark Mc Garry	02 nd June 2011		
Pre-Assessment	Observer is free from medical conditions (cold, sore throat, sinus trouble) Yes	Observer abstinence (30 min) from smoking, flavored drinks, scented toiletries, deodorisers Yes	Weather Conditions Dry Day Light Air - Direction of wind shown by smoke drift, but not wind vanes		
Source	Start time: 09:00	Do any of the odours experienced on site match in character those recorded during the off site survey? No	What relevant activities were occurring onsite during the off site odour assessment? Activities continued as normal on site - there was no alterations or unusual activities on-going		
Odour Investigation	Finish Time: 14:00	Potential On-site odours identified: Composting activities Waste holding areas Traffic Movements	List Areas Inspected: All Areas		
Parameter	Observer location	Wind	Time	Odour Rating	Description
Field Observations	Location	Direction from which wind blows	Start Time	Odour Persistence	Description of Odours etc
	Facility Office	On site	09:00	2	
	Up wind	NW	10:30	0	
	Down Wind	SE	12:00	0	
	Sensitivity	Orientation (Observer vs facility)	Period of Observation	Odour Intensity	
	2	-	70 mins	1	Compost Maturation Building
	4	Up Wind	70 mins	0	None
	4	Down Wind	70 mins	0	None
Detail of any meeting with local residents/ complaints received during the assessment					

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O Toole Composting Ltd
Ballintrane, Co Carlow

Ambient Air Survey

December 2010

Permit No: WFP/CW-10-0003-01

Report Date: 22nd February 2011

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In association with IAS Laboratories

Report Number:
3190-11-01
Version 0

AXIS environmental services
40 Coolraine Heights, Old Cratloe Road, Limerick
Phone 061 324587 (087)6367436
info@axisenv.ie www.axisenv.ie

Report for the Periodic Monitoring of Ambient Air

Part 1: Executive Summary

Operator: O Toole Composting Limited

Installation: Ballinrane,
 Co. Carlow.

Contact Name: Paddy o Toole

Contact No. 086 2647990

Contract Manager: Mark Mc Garry

Monitoring Dates: 20th December 2010

Monitoring Organisation: AXIS environmental services

Address: 40 Coolraine Heights,
 Old Cratloe Road,
 Limerick.

Laboratory: Irish Equine Centre
 Johnstown,
 Naas,
 Co Kildare

Date of Report: 22nd February 2011

Report Approved By: Mark Mc Garry

Function: Environmental Manager

Signed: 

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1 Monitoring Results

1.1 Monitoring Objectives

Monitoring was carried out at O Toole Composting Limited to determine the concentrations of a range of parameters the surrounding environment is exposed to as result of composting activities on site. Monitoring was carried out to permit requirements, fulfilling the requirements of Schedule 2, Part 4.3 Ambient Air Monitoring. There were three locations studied as part of this contract, one approximately 150m upwind of the facility, one immediately downwind of the facility and one sample point at the facility site office. The following parameters were complete for each site:

Table 1:

Parameter	Method
PM ₁₀	prEN12341
Aspergillus fumigatus	UK Composting Association Protocol
Total Bacteria	UK Composting Association Protocol
Odour	NIOSH Methods 2542, 6013, 2002, 6016
Odour	EPA Guidance Document AG5

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Table 2: Summary of Results

Monitoring Area	Substance	Units	Limits	Ambient Concentration	Status
Up Wind of the Installation	PM ₁₀	ug/m ³	50	17	Compliant
	Aspergillus fumigatus	CFU/m ³	500		
	Total Bacteria	CFU/m ³	1000		
Down Wind of the Installation	PM ₁₀	ug/m ³	50	26	Compliant
	Aspergillus fumigatus	CFU/m ³	500		
	Total Bacteria	CFU/m ³	1000		
Facility Offices	PM ₁₀	ug/m ³	50	22	Compliant
	Aspergillus fumigatus	CFU/m ³	500		
	Total Bacteria	CFU/m ³	1000		

Notes: Bacterial monitoring could not be complete due to extreme weather conditions. The ambient temperature was -5 Degrees C, which froze the sample media and made it impossible to collect a sample for analysis.

1.2 Special Monitoring Requirements

There were no special requirements for sampling and analysis for this project. All sample locations were located within the boundary of the site for worst case scenario results.

1.3 Summary of Equipment

Table 3: Equipment Summary

Item	ID Number	Calibration Status
Pump No 1	AX06	Calibrated On site Before and After Sampling
Pump No 2	AX07	Calibrated On site Before and After Sampling
Pump No 3	AX33	Calibrated On site Before and After Sampling
Defender 510 Calibrator	AX28	Calibration Certificate: 105163
Camera	-	-
PM ₁₀ Sample Heads	AX09	-
PM ₁₀ Sample Heads	AX10	-
PM ₁₀ Sample Heads	AX11	-
Biosampler 1	AX39	Autoclaved and Sterile
Biosampler 2	AX40	Autoclaved and Sterile
Biosampler 3	AX41	Autoclaved and Sterile
Sample Solution	-	Sterile Deionised Water

Table 4: Ambient Gas Concentration Results

Parameter	Method	Result			Units
		Office	Upwind	Downwind	
Mercaptans	NIOSH 2542	<0.5	<0.5	<0.5	mg/m ³
Hydrogen Sulphide	NIOSH 6013	<0.2	<0.2	<0.2	mg/m ³
Ammonia	NIOSH 2002	<0.25	<0.25	<0.25	mg/m ³
Amines	NIOSH 6016	<0.01	<0.01	<0.01	mg/m ³

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Table 5: Odour Assessment	Reference O Toole Composting	Site Permit No WFP-CW-10-003-01	Assessment by Mark Mc Garry	Date of Assessment 20-12-2010
--------------------------------------	----------------------------------------	-------------------------------------------	---------------------------------------	-----------------------------------------

Pre-Assessment Preparation	Observer is free from medical conditions (cold, sore throat, sinus trouble) Yes	Observer abstinence (30 min) from smoking, flavored drinks, scented toiletries, deodorisers Yes	Reason for Assessment - Complaint Verification, Routine, Other Permit Requirement on Bi-Annual Basis	Weather Conditions Freezing Day (-5 deg C) Light Air - Direction of wind shown by smoke drift, but not wind vanes
-----------------------------------	------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------

Source	Start time: 10:35	Do any of the odours experienced on site match in character those recorded during the off site survey? No	List Areas Inspected: All Areas	What relevant activities were occurring onsite during the off site odour assessment? Activities continued as normal on site - there was no alterations or unusual activities on-going
Odour Investigation	Finish Time: 13:00	Potential On-site odours identified: Composting activities Waste holding areas Traffic Movements		

Parameter	Observer location		Wind		Start Time	Period of Observation	Odour Persistence	Odour Intensity	Description of Odours etc
	Location	Sensitivity	Direction from which wind blows	Orientation (Observer vs facility)					
Field Observations	Facility Office	2	On site	-	10:35	45 mins	2	1	Compost Maturation Building
	Up wind	4	NW	Up Wind	11:40	45 mins	0	0	None
	Down Wind	4	SE	Down Wind	12:30	45 mins	0	0	None

Detail of any meeting with local residents/ complaints received during the assessment

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Notes:

1: **Observation Point Sensitivity**

- 1: Remote (no housing, commercial/ industrial premises, or public area within 500 metres of the observation point);
- 2: Low Sensitivity (no housing, commercial/ industrial premises or public area within 100m of the observation point);
- 3: Moderate sensitivity (housing, commercial/ industrial premises or public area within 100m of the observation point);
- 4: High Sensitivity: (housing, commercial/ industrial premises or public area within area of the observation point);
- 5: Extra Sensitive: (complaints arising from residents, business and users of public areas within area of observation point).

2: **Wind Strength**

- 0: Calm
Smoke rises vertically;
- 1: Light Air
Direction of wind shown by smoke drift, but not wind vanes;
- 2: Light Breeze
Wind felt on face; leaves rustle, ordinary vane moved by wind;
- 3: Gentle Breeze
Leaves and small twigs in constant motion;
- 4: Moderate Breeze
Raises dust and loose paper, small branches are moved;
- 5: Fresh Breeze
Small trees in leaf begin to sway;
- 6: Strong Breeze
Large branches in motion, umbrellas used with difficulty;
- 7: Near Gale
Whole trees in motion;
- 8: Gale
Twigs break off trees;
- 9: Strong Gale
Slight structural damage occurs.

3: **Weather Conditions**

- 1: Precipitation
Dry, rain, recent drizzle, raining, foggy;
- 2: Temperature
Cold, Cool, Warm, Hot;

4: **Odour Persistence**

- 0: No Odour;
- 1: Intermittent (detected intermittently during the period of assessment);
- 2: Persistent (detected throughout the period of the assessment);

5: **Odour Intensity**

- 0: No detectable odour;
- 1: Faint Odour (barely detectable, need to stand still and inhale facing into the wind);
- 2: Moderate odour (easily detectable while walking and breathing normally, possibly offensive);
- 3: Strong Odour (bearable but offensive – might make clothes/ hair smell);
- 4: Very Strong Odour (unbearable, difficult to remain in area affected by odour).

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Ambient Air Survey

September 2010

O Toole Composting Ltd
Ballintrane, Co Carlow

Permit No: WFP-CW-10-0003-01

Report Date: 14th October 2010

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In association with IAS Laboratories

Report Number:
3190-10-01
Version 0

AXIS environmental services
40 Coolraine Heights, Old Cratloe Road, Limerick
Phone 061 324587 (087)6367436
info@axisenv.ie www.axisenv.ie

Report for the Periodic Monitoring of Ambient Air

Part 1: Executive Summary

Operator: O Toole Composting Limited

Installation: Ballintrane,
 Co. Carlow.

Contact Name: Paddy o Toole

Contact No: 086 2647990

Contract Manager: Mark Mc Garry

Monitoring Dates: 30th September 2010

Monitoring Organisation: AXIS environmental services

Address: 40 Coolraine Heights,
 Old Cratloe Road,
 Limerick.

Laboratory: Irish Equine Centre
 Johnstown,
 Naas,
 Co Kildare

Date of Report: 14th October 2010

Report Approved By: Mark Mc Garry

Function: Environmental Manager

Signed: 

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1 Monitoring Results

1.1 Monitoring Objectives

Monitoring was carried out at O Toole Composting Limited to determine the concentrations of a range of parameters the surrounding environment is exposed to as result of composting activities on site. Monitoring was carried out to permit requirements, fulfilling the requirements of Schedule 2, Part 4.3 Ambient Air Monitoring. There were three locations studied as part of this contract, one approximately 150m upwind of the facility, one immediately downwind of the facility and one sample point at the facility site office. The following parameters were complete for each site:

Table 1:

Parameter	Method
PM ₁₀	prEN12341
Aspergillus fumigatus	UK Composting Association Protocol
Total Bacteria	UK Composting Association Protocol
Odour	NIOSH Methods 2542, 6013, 2002, 6016
Odour	EPA Guidance Document AG5

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Table 2: Summary of Results

Monitoring Area	Substance	Units	Limits	Ambient Concentration	Status
Up Wind of the Installation	PM ₁₀	ug/m ³	50	32	Compliant
	Aspergillus fumigatus	CFU/m ³	500	0	Compliant
	Total Bacteria	CFU/m ³	1000	20	Compliant
Down Wind of the Installation	PM ₁₀	ug/m ³	50	36	Compliant
	Aspergillus fumigatus	CFU/m ³	500	0	Compliant
	Total Bacteria	CFU/m ³	1000	100	Compliant
Facility Offices	PM ₁₀	ug/m ³	50	39	Compliant
	Aspergillus fumigatus	CFU/m ³	500	0	Compliant
	Total Bacteria	CFU/m ³	1000	130	Compliant

1.2 Special Monitoring Requirements

There were no special requirements for sampling and analysis for this project. All sample locations were located within the boundary of the site for worst case scenario results.

1.3 Summary of Equipment

Table 3: Equipment Summary

Item	ID Number	Calibration Status
Pump No 1	AX06	Calibrated On site Before and After Sampling
Pump No 2	AX07	Calibrated On site Before and After Sampling
Pump No 3	AX33	Calibrated On site Before and After Sampling
Defender 510 Calibrator	AX28	Calibration Certificate: 105163
Camera	-	-
PM ₁₀ Sample Heads	AX09	-
PM ₁₀ Sample Heads	AX10	-
PM ₁₀ Sample Heads	AX11	-
Biosampler 1	AX39	Autoclaved and Sterile
Biosampler 2	AX40	Autoclaved and Sterile
Biosampler 3	AX41	Autoclaved and Sterile
Sample Solution	-	Sterile Deionised Water

Table 4: Ambient Gas Concentration Results

Parameter	Method	Result			Units
		Office	Upwind	Downwind	
Mercaptans	NIOSH 2542	<0.5	<0.5	<0.5	mg/m ³
Hydrogen Sulphide	NIOSH 6013	<0.2	<0.2	<0.2	mg/m ³
Ammonia	NIOSH 2002	<0.25	<0.25	<0.25	mg/m ³
Amines	NIOSH 6016	<0.01	<0.01	<0.01	mg/m ³

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Table 5: Odour Assessment	Reference	Site Permit No	Assessment by	Date of Assessment						
	O Toole Composting	WFP-CW-10-003-01	Mark Mc Garry	30-09-2010						
Pre-Assessment	Observer is free from medical conditions (cold, sore throat, sinus trouble) Yes	Observer abstinance (30 min) from smoking, flavored drinks, scented toiletries, deodorisers Yes	Reason for Odour Assessment - Complaint, Verification, Routine, Other Permit Requirement on Bi-Annual Basis	Weather Conditions Dry Day Light Air - Direction of wind shown by smoke drift, but not wind vanes						
Source	Start time: 09:00	Do any of the odours experienced on site match in character those recorded during the off site survey? No	List Areas Inspected:	What relevant activities were occurring onsite during the off site odour assessment? Activities continued as normal on site - there was no alterations or unusual activities on-going						
Odour Investigation	Finish Time: 12:00	Potential On-site odours identified: Composting activities Waste holding areas Traffic Movements	All Areas							
Parameter	Observer location		Wind		Time		Odour Rating		Description	
	Location	Sensitivity	Direction from which wind blows	Orientation (Observer vs facility)	Strength	Start Time	Period of Observation	Odour Persistence		Odour Intensity
Field Observations	Facility Office	2	On site		2	09:00	45 mins	2	1	Compost Maturation Building
	Up wind	4	NW	Up Wind	2	10:00	45 mins	0	0	None
	Down Wind	4	SE	Down Wind	2	11:00	45 mins	0	0	None
Detail of any meeting with local residents/ complaints received during the assessment										

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Notes:

1: Observation Point Sensitivity

- 1: Remote (no housing, commercial/ industrial premises, or public area within 500 metres of the observation point);
- 2: Low Sensitivity (no housing, commercial/ industrial premises or public area within 100m of the observation point);
- 3: Moderate sensitivity (housing, commercial/ industrial premises or public area within 100m of the observation point);
- 4: High Sensitivity: (housing, commercial/ industrial premises or public area within area of the observation point);
- 5: Extra Sensitive: (complaints arising from residents, business and users of public areas within area of observation point).

2: Wind Strength

- 0: Calm
Smoke rises vertically;
- 1: Light Air
Direction of wind shown by smoke drift, but not wind vanes;
- 2: Light Breeze
Wind felt on face; leaves rustle, ordinary vane moved by wind;
- 3: Gentle Breeze
Leaves and small twigs in constant motion;
- 4: Moderate Breeze
Raises dust and loose paper, small branches are moved;
- 5: Fresh Breeze
Small trees in leaf begin to sway;
- 6: Strong Breeze
Large branches in motion, umbrellas used with difficulty;
- 7: Near Gale
Whole trees in motion;
- 8: Gale
Twigs break off trees;
- 9: Strong Gale
Slight structural damage occurs.

3: Weather Conditions

- 1: Precipitation
Dry, rained recently, drizzle, raining, foggy;
- 2: Temperature
Cold, Cool, Warm, hot;

4: Odour Persistence

- 0: No Odour;
- 1: Intermittent (detected intermittently during the period of assessment);
- 2: Persistent (detected throughout the period of the assessment);

5: Odour Intensity

- 0: No detectable odour;
- 1: Faint Odour (barely detectable, need to stand still and inhale facing into the wind);
- 2: Moderate odour (easily detectable while walking and breathing normally, possibly offensive);
- 3: Strong Odour (bearable but offensive – might make clothes/ hair smell);
- 4: Very Strong Odour (unbearable, difficult to remain in area affected by odour).

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O'Toole Composting, Fenagh, Co. Carlow

PROJECT:

*Carlow Co. Co. Waste Permit Register No. 01/07
Compliance*

DOCUMENT:

Report on Annual Noise Monitoring Survey

Client :
IAS Ltd.
Kilcarrig St.
Bagenalstown
Co. Carlow



bluegreen

September 2011

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DOCUMENT CONTROL SHEET

Client	IAS Ltd., Bagenalstown, Co. Carlow					
Project Title	O'Toole Composting					
Document Title	Report on Annual Noise Monitoring Survey					
Document No.	BG1016-003					
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1. INTRODUCTION

Bluegreen Environmental Consulting (BEC) was commissioned by IAS Ltd. to perform an annual noise survey for O'Toole Composting Ltd. at their premises at Ballinrane, Fenagh, Co. Carlow. This survey was conducted in compliance with the requirements of the Waste Permit for the Facility.

2. SURVEY DETAILS

2.1 Introduction

Measurements were conducted by BEC Staff on Saturday 24th of September 2010 a.m. All measurements were carried out in accordance with ISO 1996 and EPA Noise survey Guidelines, as specified in the waste licence for the facility.

A total of twelve measurements were undertaken, across 6 locations as specified in Schedule D of the Waste Permit Register for the site (Ref: 01/07)

2.2 Equipment and Calibration

Surveys were carried out using a Bruel and Kjaer Sound Level Meter Type 2268 investigator, and a calibrated by a Bruel and Kjaer Calibrator 4231.

The instrument was calibrated before the start of measurements to 94dB and the calibration was verified at the end of both the day and night measurements. Both The sound level meter and calibrator have a calibration certificate.

2.3 Weather Conditions

The weather conditions during the survey were clear skies. Calm light winds from a Westerly / South Westerly direction. Occasional light breezes caused movement in trees and shrubs.

2.4 Noise Locations:

The locations for the survey are consistent with historical surveys and reports, and as set out in Schedule D of the Waste Permit.

The table below provides a description, with locations illustrated in Figure on, at the end of this report.

Location	Description
N1	External side of North Western site boundary
N1A	External side of North Eastern site boundary
N2	External side of southern site boundary
N3	External boundary of residential property to South of Site
N4	Residential Property to east of site
N5	Residential Property to east of site
N6	Residential Property at Ballintrae Cross Roads

2.5 Methodology:

Surveys were undertaken in accordance with ISO:1996 and EPA guidelines.

Values for LA_{10} , LA_{90} , and LA_{eq} were recorded for each location. These measurements were recorded for a duration of 30 mins for day time surveys, and 15 mins for night time surveys.

Explanations of these terms and the permitted noise limits are specified in Section 3 of this report.

3. TERMINOLOGY AND LIMITS

3.1 Terminology

In order to understand the assessment criteria and terms used, the following definitions are provided:

LA_{eq}: In assessing noise, LA_{eq} is often used (also written dBA Leq); this term is the 'equivalent continuous level', or the average sound level over a period of time. The formal definition is "when a noise varies over time, the Leq is the equivalent continuous sound which would contain the same sound energy as the time varying sound".

LA₁₀: The LA₁₀ value is that which is exceeded for 10 percent of the time during a sampling period. This means that for ten percent of the time, the noise level recorded was at the LA₁₀ value or higher. It is used to provide an indication of the amount of intermittent and impulsive noises recorded during a survey.

LA₉₀: The LA₉₀ value is that which is exceeded for 90 percent of the time during a sampling period. This means that for ten percent of the time, the noise level recorded was at the LA₉₀ value or higher. It is used to provide an indication of the background noise level.

By analysing the relative spread between these three values, it is possible to examine the level of extent of intermittent and impulsive noise on the background levels.

3.2 Permitted Limits

The acceptable level of noise generated by the site and site activities is specified in Schedule 3, Table 3 of the waste permit for the facility, and included in the table below:

Daytime:	55dB LA _{eq} , 30mins
Night-time:	45dB LA _{eq} , 15min

4. RESULTS AND OBSERVATIONS:

4.1 Results

The results for each location are presented in the table below:

Day Time:

Location	Time and Date	Notes	Noise Levels dB(A)		
			LA _{eq}	LA ₉₀	LA ₁₀
N1	24/09/2011 13:28-13:58	N80 Road Traffic Noise Dominant. Occasional truck entering / exiting premises	46.7	44.0	62.0
N1A	24/09/2011 12:21-12:51	N80 Road Traffic Noise dominant throughout	57.0	45.5	64.8
N2	24/09/2011 12:56-13:26	Quiet environment. Continuous fan noise broadband in characteristic.	47.5	49.0	53.0
N3	24/09/2011 14:00-14:30	Distance Traffic Noise. Occasional Passing vehicle.	49.6	41.0	55.6
N4	24/09/2011	N80 Road Traffic Noise dominant Trucks passing (>90dB recorded)	62.5	44.8	70.4
N5	24/09/2011 07:57-08:27	Almost continuous Traffic Noise. Passing Conversation.	60.0	37.5	68.5
N6	24/09/2011 07:20 - 07:50	Occasional passing vehicle. Distant traffic noise	49.4	46.8	56.2

Night Time:

Location	Time and Date	Notes	Noise Levels dB(A)		
			LA _{eq}	LA ₉₀	LA ₁₀
N1	24/09/2011 05:00-05:15	Occasional traffic from N80.	40.1	37.6	51.5
N1A	24/09/2011 06:00-06:15	Occasional traffic from N80.	39.1	37.8	44.0
N2	24/09/2011 05:41-05:56	Low noise environment. Extractor fans audible. Occasional rustle in trees.	38.7	37.0	41.3
N3	24/09/2011 05:17-05:33	Low noise environment. Distance Traffic Noise. Rustle in trees.	38.0	35.4	40.5
N4	24/09/2011 06:23-06:37	N80 Road Traffic Noise dominant.	51.0	37.5	56.7
N5	24/09/2011 06:57-07:13	N80 Traffic Noise Dominant. Passing trucks and tractors (>90dB Recorded)	60.0	37.5	68.5
N6	24/09/2011 06:40-06:55	Quiet overall, No site noise audible	42	40	48

4.2 Observations

The following observations were noted during the survey that provides further detail to the characteristics and nature of the noise environment during the survey:

- During the day time, the characteristic of site generated noise consists of extractor fans, operation of machinery inside the buildings, occasional reversing alarms machinery and trucks entering / exiting the premises.
- During the night time, the characteristic of site generated noise consists of extractor fans. There is no tonal element to the noise source.
- During both periods, noise levels at N1, N1A, N3, N4, N5 and N6 are dominated by passing traffic. No significant site noise emanating from the facility was observed.
- Site noise from the facility was audible at N2 during the day time and night time, and is the dominant noise source. Noise levels are well within the threshold limits at that location.
- Site noise from the facility was observed at N1, N1A, N3, and N6 during the night time survey, in the form of extractor fans. However, the noise environment at these locations is dominated by traffic noise. Site generated sources significant do not significantly contribute to background noise levels.

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5. CONCLUSION

Noise levels in the immediate vicinity of the site and at nearby sensitive receptors are mainly dominated by traffic noise from the adjacent N80 National Road. High LA_{10} values from passing traffic raised the overall equivalent or average noise level (LA_{eq}). Background values (LA_{90}) provide a general indication of the noise environment with the traffic source removed.

The noise environment at the site boundaries are considered to be best represented at the N2 location, which is less influenced by passing traffic. The LA_{eq} measurements at this location were 47.5dB(A) and 38.7dB(A) for day time and night time periods respectively.

The nearest noise sensitive location is N3, located to the south of the site. This residential location is also the set back from the N80, so is less influenced by passing traffic. The LA_{eq} values recorded at this location were 49.6dB(A) and 38.0dB(A) for day time and night time periods respectively.

The results indicate that plant machinery and operation practices within the facility do not significantly contribute to the local noise environment and or cause undue disturbance to nearby sensitive locations. The results also indicate that the plant is operating within its permitted noise limits as set out in its waste licence.

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Legend

- ★ Noise Monitoring Location
- ▬ National Primary Road
- ▬ Secondary Road
- ▬ Site Boundary
- Buildings

Client:

Patrick O'Toole

Client Representative:



bluestar

Project:

BG1016

Drawing Title:

Monitoring Locations

Figure 1

Scale	NTE
Drawn By	Er
Date	OCT 12
Approved By	Gr
Date	OCT 12



O'Toole Composting, Fenagh, Co. Carlow

PROJECT:

***Carlow Co. Co. Waste Permit Register No. 01/07
Compliance***

DOCUMENT:

Report on Annual Noise Monitoring Survey

Client :
IAS Ltd.
Kilcarrig St.
Bagenalstown
Co. Carlow



bluegreen environmental solutions

September 2011

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DOCUMENT CONTROL SHEET

Client	IAS Ltd., Bagenalstown, Co. Carlow					
Project Title	O'Toole Composting					
Document Title	Report on Annual Noise Monitoring Survey					
Document No.	BG1016-003					
This Document Comprises	DCS	TOC	List of Tables	List of Figures	Pages of Text	Figures
	1	1			6 No.	1 No.

Revision	Status	Author(s)	Checked By	Approved By	Issue Date
-	Final	BH	BH	BH	Sep 2011

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3.	TERMINOLOGY AND LIMITS	3
4.	RESULTS AND OBSERVATIONS:	4
5.	CONCLUSION	6

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1. INTRODUCTION

Bluegreen Environmental Consulting (BEC) was commissioned by IAS Ltd. to perform an annual noise survey for O'Toole Composting Ltd. at their premises at Ballinrane, Fenagh, Co. Carlow. This survey was conducted in compliance with the requirements of the Waste Permit for the Facility.

2. SURVEY DETAILS

2.1 Introduction

Measurements were conducted by BEC Staff on Saturday 24th of September 2010 a.m. All measurements were carried out in accordance with ISO 1996 and EPA Noise survey Guidelines, as specified in the waste licence for the facility.

A total of twelve measurements were undertaken, across 6 locations as specified in Schedule D of the Waste Permit Register for the site (Ref: 11/07)

2.2 Equipment and Calibration

Surveys were carried out using a Bruel and Kjaer Sound Level Meter Type 2268 investigator, and a calibrated by a Bruel and Kjaer Calibrator 4231.

The instrument was calibrated before the start of measurements to 94dB and the calibration was verified at the end of both the day and night measurements. Both The sound level meter and calibrator have a calibration certificate.

2.3 Weather Conditions

The weather conditions during the survey were clear skies. Calm light winds from a Westerly / South Westerly direction. Occasional light breezes caused movement in trees and shrubs.

2.4 Noise Locations:

The locations for the survey are consistent with historical surveys and reports, and as set out in Schedule D of the Waste Permit.

The table below provides a description, with locations illustrated in Figure on, at the end of this report.

Location	Description
N1	External side of North Western site boundary
N1A	External side of North Eastern site boundary
N2	External side of southern site boundary
N3	External boundary of residential property to South of Site
N4	Residential Property to east of site
N5	Residential Property to east of site
N6	Residential Property at Ballintraane Cross Roads

2.5 Methodology:

Surveys were undertaken in accordance with ISO:1996 and EPA guidelines.

Values for LA_{10} , LA_{90} , and LA_{eq} were recorded for each location. These measurements were recorded for a duration of 30 mins for day time surveys, and 15 mins for night time surveys.

Explanations of these terms and the permitted noise limits are specified in Section 3 of this report.

3. TERMINOLOGY AND LIMITS

3.1 Terminology

In order to understand the assessment criteria and terms used, the following definitions are provided:

LA_{eq}: In assessing noise, LA_{eq} is often used (also written dBA Leq); this term is the 'equivalent continuous level', or the average sound level over a period of time. The formal definition is "when a noise varies over time, the Leq is the equivalent continuous sound which would contain the same sound energy as the time varying sound".

LA₁₀: The LA₁₀ value is that which is exceeded for 10 percent of the time during a sampling period. This means that for ten percent of the time, the noise level recorded was at the LA₁₀ value or higher. It is used to provide an indication of the amount of intermittent and impulsive noises recorded during a survey.

LA₉₀: The LA₉₀ value is that which is exceeded for 90 percent of the time during a sampling period. This means that for ten percent of the time, the noise level recorded was at the LA₉₀ value or higher. It is used to provide an indication of the background noise level.

By analysing the relative spread between these three values, it is possible to examine the level of extent of intermittent and impulsive noise on the background levels.

3.2 Permitted Limits

The acceptable level of noise generated by the site and site activities is specified in Schedule 3, Table 3 of the waste permit for the facility, and included in the table below:

Daytime:	55dB LA _{eq} , 30mins
Night-time:	45dB LA _{eq} , 15min

4. RESULTS AND OBSERVATIONS:

4.1 Results

The results for each location are presented in the table below:

Day Time:

Location	Time and Date	Notes	Noise Levels dB(A)		
			LA _{eq}	LA ₉₀	LA ₁₀
N1	24/09/2011 13:28-13:58	N80 Road Traffic Noise Dominant. Occasional truck entering / exiting premises	46.7	44.0	62.0
N1A	24/09/2011 12:21-12:51	N80 Road Traffic Noise dominant throughout.	57.0	45.5	64.8
N2	24/09/2011 12:56-13:26	Quiet environment. Continuous fan noise broadband in characteristic.	47.5	49.0	53.0
N3	24/09/2011 14:00-14:30	Distance Traffic Noise. Occasional Passing vehicle.	49.6	41.0	55.6
N4	24/09/2011	N80 Road Traffic Noise dominant Trucks passing (>90dB recorded)	62.5	44.8	70.4
N5	24/09/2011 07:57-08:27	Almost continuous Traffic Noise. Passing Conversation.	60.0	37.5	68.5
N6	24/09/2011 07:20 - 07:50	Occasional passing vehicle. Distant traffic noise	49.4	46.8	56.2

Night Time:

Location	Time and Date	Notes	Noise Levels dB(A)		
			LA _{eq}	LA ₉₀	LA ₁₀
N1	24/09/2011 05:00-05:15	Occasional traffic from N80.	40.1	37.6	51.5
N1A	24/09/2011 06:00-06:15	Occasional traffic from N80.	39.1	37.8	44.0
N2	24/09/2011 05:41-05:56	Low noise environment. Extractor fans audible. Occasional rustle in trees.	38.7	37.0	41.3
N3	24/09/2011 05:17-05:33	Low noise environment. Distance Traffic Noise. Rustle in trees.	38.0	35.4	40.5
N4	24/09/2011 06:23-06:37	N80 Road Traffic Noise dominant.	51.0	37.5	56.7
N5	24/09/2011 06:57-07:13	N80 Traffic Noise Dominant. Passing trucks and tractors (>90dB Recorded)	60.0	37.5	68.5
N6	24/09/2011 06:40-06:55	Quiet overall. No site noise audible	42	40	48

4.2 Observations

The following observations were noted during the survey that provides further detail to the characteristics and nature of the noise environment during the survey:

- During the day time, the characteristic of site generated noise consists of extractor fans, operation of machinery inside the buildings, occasional reversing alarms machinery and trucks entering / exiting the premises.
- During the night time, the characteristic of site generated noise consists of extractor fans. There is no tonal element to the noise source.
- During both periods, noise levels at N1, N1A, N3, N4, N5 and N6 are dominated by passing traffic. No significant site noise emanating from the facility was observed.
- Site noise from the facility was audible at N2 during the day time and night time, and is the dominant noise source. Noise levels are well within the threshold limits at that location.
- Site noise from the facility was observed at N1, N1A, N3, and N6 during the night time survey, in the form of extractor fans. However, the noise environment at these locations is dominated by traffic noise. Site generated sources significant do not significantly contribute to background noise levels.

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5. CONCLUSION

Noise levels in the immediate vicinity of the site and at nearby sensitive receptors are mainly dominated by traffic noise from the adjacent N80 National Road. High LA_{10} values from passing traffic raised the overall equivalent or average noise level (LA_{eq}). Background values (LA_{90}) provide a general indication of the noise environment with the traffic source removed.

The noise environment at the site boundaries are considered to be best represented at the N2 location, which is less influenced by passing traffic. The LA_{eq} measurements at this location were 47.5dB(A) and 38.7dB(A) for day time and night time periods respectively.

The nearest noise sensitive location is N3, located to the south of the site. This residential location is also the set back from the N80, so is less influenced by passing traffic. The LA_{eq} values recorded at this location were 49.6dB(A) and 38.0dB(A) for day time and night time periods respectively.

The results indicate that plant machinery and operation practices within the facility do not significantly contribute to the local noise environment and or cause undue disturbance to nearby sensitive locations. The results also indicate that the plant is operating within its permitted noise limits as set out in its waste licence.

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Legend

- ★ Noise Monitoring Location
- ▬ National Primary Road
- ▬ Secondary Road
- ▬ Site Boundary
- ▬ Buildings

Client:

Patrick O'Toole

Client Representative:



bluesign

Project:

BG1016

Drawing Title:

Monitoring Locations

Figure 1

Scale	NTS
Drawn By	SR
Date	OCT 12
Approved By	SR
Date	OCT 10



O'Toole Composting, Fenagh, Co. Carlow

PROJECT:

**Carlow Co. Co. Waste Permit Register No. 01/07
Compliance**

DOCUMENT:

Report on Annual Noise Monitoring Survey

Client :
IAS Ltd.
Kilcarrig St.
Bagenalstown
Co. Carlow



bluegreen environmental

October 2010

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2.4 Noise Locations:

The locations for the survey are consistent with historical surveys and reports, and as set out in Schedule D of the Waste Permit.

The table below provides a description, with locations illustrated in Figure on, at the end of this report.

Location	Description
N1	External side of North Western site boundary
N1A	External side of North Eastern site boundary
N2	External side of southern site boundary
N3	External boundary of residential property to north of Site
N4	Residential Property to east of site
N5	Residential Property to east of site
N6	Residential Property at Ballinrane Cross Roads.

2.5 Methodology:

Surveys were undertaken in accordance with ISO:1996 and EPA guidelines.

Values for LA_{10} , LA_{90} , and LA_{eq} were recorded for each location. These measurements were recorded for a duration of 30 mins for day time surveys, and 15 mins for night time surveys.

Explanations of these terms and the permitted noise limits are specified in Section 3 of this report.

4. RESULTS AND OBSERVATIONS:

4.1 Results

The measurement readings from the Noise survey have been rounded to the nearest decibel. The results for each location are presented in the table below:

Day Time:

Location	Time and Date	Notes	Noise Levels dB(A)		
			LA _{eq}	LA ₉₀	LA ₁₀
N1	30/09/2010 12:35-1:05	N80 Road Traffic Noise Dominant. Occasional truck entering / exiting premises	57	44	62
N1A	30/09/2010 13:11-13:41	N80 Road Traffic Noise dominant throughout.	57	45	64
N2	30/09/2010 13:59-14:29	Fan Noise and Machinery inside sheds.	52	48	58
N3	30/09/2010 14:44-15:14	Distance Traffic Noise. Occasional rustle in vegetation.	51	42	53
N4	30/09/2010 15:20-15:50	N80 Road Traffic Noise dominant	66	44	70
N5	30/09/2010 16:30-17:00	Almost continuous Traffic noise.	67	55	73
N6	30/09/2010 17:10-17:40	Occasional passing vehicle. Wind beginning to strengthen with rain at end	56	46	59

Night Time:

Location	Time and Date	Notes	Noise Levels dB(A)		
			LA _{eq}	LA ₉₀	LA ₁₀
N1	20/10/2010 22:03-22:18	Occasional traffic from N80	42	38	44
N1A	20/10/2010 22:22-22:37	Occasional traffic from N80	44	40	49
N2	20/10/2010 22:45-23:00	Low noise environment. Extractor fans dominant.	39	36	41
N3	10/10/2010 23:16-23:31	Low noise environment. Distance Traffic Noise.	37	36	39
N4	20/10/2010 23:40-23:55	N80 Road Traffic Noise dominant. Occasional conversation	48	40	54
N5	20/10/2010 23:59-00:14	N80 Traffic Noise Dominant.	50	41	56
N6	21/10/2010 00:20-11:35	Occasional vehicle.	42	40	48

5. CONCLUSION

Noise levels in the immediate vicinity of the site and at nearby sensitive receptors are mainly dominated by traffic noise from the adjacent N80 National Road. High LA_{10} values from passing traffic raised the overall equivalent or average noise level (LA_{eq}). Background values (LA_{90}) provide a general indication of the noise environment with the traffic source removed.

The noise environment at the site boundaries are considered to be best represented at the N2 location, which is less influenced by passing traffic. The LA_{eq} measurements at this location were 52dB(A) and 39dB(A) for day time and night time periods respectively.

The nearest noise sensitive location is N3, located to the south of the site. This residential location is also the set back from the N80, so is less influenced by passing traffic. The LA_{eq} values recorded at this location were 51dB(A) and 37dB(A) for day time and night time periods respectively.

The results indicate that plant machinery and operation practices within the facility do not significantly contribute to the local noise environment and or cause undue disturbance to nearby sensitive locations. The results also indicate that the plant is operating within its permitted noise limits as set out in its waste licence.

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T.E. LABORATORIES LIMITED

Trading as

TelLab 

Loughmartin Business Park, Tullow, Co. Carlow
Phone: 059-9152881 Fax: 059-9152886

CERTIFICATE OF ANALYSIS

Page 1 of 2

Analysis of Dust Samples

Attention:	Mr. Patrick O'Toole	Lab ID:	8806-89265
Company:	O'Toole Composting	Date Sampled:	Unknown
Address:	Ballintrane Fenagh Co. Carlow		
Certificate No:	L/10/1291	Date Rec'd:	21.06.2010
Issue Date:	30.06.2010	Our Ref:	WS-27412

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Three samples were analysed for a range of determinands.
Please see page 2 for results. Terms & Conditions and methods
used are outlined in the attached appendix.

No. of Pages:

Results page 2 plus 4 page appendix

Mark Bowkett
Mr. Mark Bowkett
Chief Executive

Breda Moore
Ms Breda Moore
Technical Manager

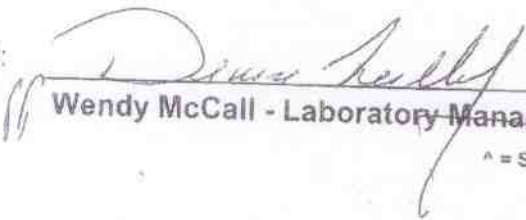


Test Report

Lab Report Number: 9382E01		Analysis Number: 99A/54102	
Customer ID:	O'TOO.C1	Analysis Type:	Misc. Tests (99A)
Contact Name:	PATRICK O'TOOLE	Delivery By:	Customer
Company Name:	O'TOOLE COMPOSTING LTD	Sample Card Number:	3657/3
Address:	BALLINTRANE FENAGH CO. CARLOW	Sample Condition:	Acceptable
Sample Type:	Dust	Date Sample Received:	08/07/2011
Sample Reference:	DUJST	Date Analysis Commenced:	08/07/2011
Sample Description:	D1	Date Certificate Issued:	20/07/2011

Parameter	Method	Result	Unit
Weight increase	Drying @ 105°C	0.5	g/m2

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Signed: 
Wendy McCall - Laboratory Manager

Date: 20/7/2011

^A = Subcontracted

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Phone: 00353 59 9721022 Fax: 00353 59 9721897 Email: ias@iaslabs.ie Web: www.iaslabs.ie



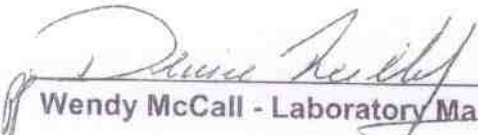
Test Report

Lab Report Number: 9382E02	Analysis Number: 99A/54103
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Customer ID: O'TOO.C1	Analysis Type: Misc. Tests (99A)
Contact Name: PATRICK O'TOOLE	Delivery By: Customer
Company Name: O'TOOLE COMPOSTING LTD	Sample Card Number: 3657/3
Address: BALLINTRANE FENAGH CO. CARLOW	Sample Condition: Acceptable
Sample Type: Dust	Date Sample Received: 08/07/2011
Sample Reference: DUST	Date Analysis Commenced: 08/07/2011
Sample Description: D2	Date Certificate Issued: 20/07/2011

Parameter	Method	Result	Unit
Weight Increase	Drying @ 105°C	0.3	g/m2

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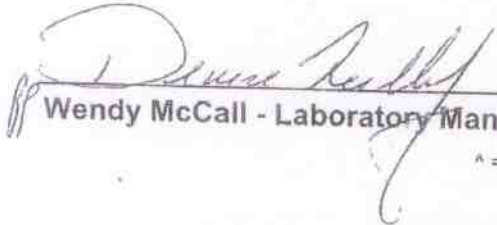


Test Report

Lab Report Number: 9382E03		Analysis Number: 99A/54104	
Customer ID:	O'TOO.C1	Analysis Type:	Misc. Tests (99A)
Contact Name:	PATRICK O'TOOLE	Delivery By:	Customer
Company Name:	O'TOOLE COMPOSTING LTD	Sample Card Number:	3657/3
Address:	BALLINTRANE FENAGH CO. CARLOW	Sample Condition:	Acceptable
Sample Type:	Dust	Date Sample Received:	08/07/2011
Sample Reference:	DUST	Date Analysis Commenced:	08/07/2011
Sample Description:	D3	Date Certificate Issued:	20/07/2011

Parameter	Method	Result	Unit
Weight increase	Drying @ 105°C	1.4	g/m2

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Wendy McCall - Laboratory Manager

Date: 20/7/2011

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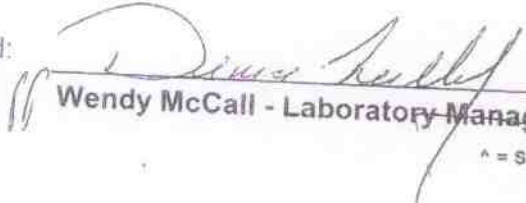


Test Report

Lab Report Number: 9382E01		Analysis Number: 99A/54102	
Customer ID:	O'TOO C1	Analysis Type:	Misc. Tests (99A)
Contact Name:	PATRICK O'TOOLE	Delivery By:	Customer
Company Name:	O'TOOLE COMPOSTING LTD	Sample Card Number:	3657/3
Address:	BALLINTRANE FENAGH CO. CARLOW	Sample Condition:	Acceptable
Sample Type:	Dust	Date Sample Received:	08/07/2011
Sample Reference:	DUST	Date Analysis Commenced:	08/07/2011
Sample Description:	D1	Date Certificate Issued:	20/07/2011

Parameter	Method	Result	Unit
Weight increase	Drying @ 105°C	0.5	g/m2

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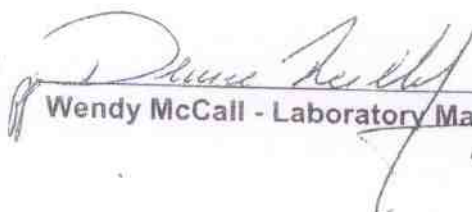
Test Report

Lab Report Number: 9382E02	Analysis Number: 99A/54103
Customer ID: O'TOO C1	Analysis Type: Misc. Tests (99A)
Contact Name: PATRICK O'TOOLE	Delivery By: Customer
Company Name: O'TOOLE COMPOSTING LTD	Sample Card Number: 3657/3
Address: BALLINTRANE FENAGH CO. CARLOW	Sample Condition: Acceptable
Sample Type: Dust	Date Sample Received: 08/07/2011
Sample Reference: DUST	Date Analysis Commenced: 08/07/2011
Sample Description: D2	Date Certificate Issued: 20/07/2011

Parameter	Method	Result	Unit
Weight increase	Drying @ 105°C	0.3	g/m ²

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Date:

20/7/2011

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Test Report

Lab Report Number: 9382E03

Analysis Number: 99A/54104

Customer ID: O'TOO.C1
 Contact Name: PATRICK O'TOOLE
 Company Name: O'TOOLE COMPOSTING LTD
 Address: BALLINTRANE
 FENAGH
 CO. CARLOW

Analysis Type: Misc. Tests (99A)
 Delivery By: Customer
 Sample Card Number: 3657/3
 Sample Condition: Acceptable

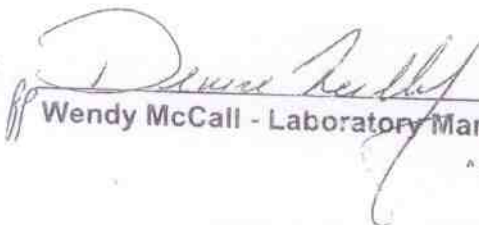
Sample Type: Dust
 Sample Reference: DUST
 Sample Description: D3

Date Sample Received: 08/07/2011
 Date Analysis Commenced: 08/07/2011
 Date Certificate Issued: 20/07/2011

Parameter	Method	Result	Unit
Weight increase	Drying @ 105°C	1.4	g/m ²

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