## **Appendix 5.2**

Ambient Air

Consent of copyright our

AXIS	
Ambient Air Survey October 2013	O Toole Composting Ltd Ballintrane, Co Carlow  Ballintrane, Co Carlow  Report Date: 27th November 2013
Report Number: 3190-13-02 Version 0	AXIS environmental services 40 Coolraine Heights, Old Cratloe Road, Limerick Phone 061 324587 (087)6367436 info@axisenv.iewww.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:

24th October 2103

Monitoring Organisation:

AXIS environmental services

Address:

Laboratory

Johnstown Production Name of the Production of t

Consent of 27<sup>th</sup> November 2013

Date of Report

Report Approved By:

Function:

Environmental Manager

Signed:

10,00mg

## 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 atmosphere 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 of the control
PM <sub>10</sub>	87EN92341
Aspergillus fumigatus	UK Composting Association Protocol
Total Bacteria	UK Composting Association Protocol
Odour Foldright	EN 13725
Aspergillus fumigatus  Total Bacteria  Odour total prince teditoring teditori	EPA Guidance Document AG5

Version: 0

Table 2: Summary of Results

Monitoring Area	Substance	Method	Limits	Ambient Concentration	Units
Site 1 Up Wind of the Installation	PM <sub>10</sub> Aspergillus fumigatus Total Bacteria Odour Threshold Conc	EN 12341 Impactor Impactor Olfactometry	None Applied in the permit	103 0 62 <45 (No Distinct Odour)	ug/m <sup>3</sup> CFU/m <sup>3</sup> CFU/m <sup>3</sup> Ou <sub>E/</sub> m <sup>3</sup>
Site 2  Down Wind of the Installation	PM <sub>10</sub> Aspergillus fumigatus Total Bacteria Odour Threshold Conc	EN 12341 Impactor Impactor Olfactometry	None Applied in the Permit	79 0 496 49 (Slight Sweet Odour)	ug/m <sup>3</sup> CFU/m <sup>3</sup> CFU/m <sup>3</sup> Ou <sub>E/</sub> m <sup>3</sup>
Site 3 Facility Offices	PM <sub>10</sub> Aspergillus fumigatus Total Bacteria Odour Threshold Codo	EN 12841	None Applied in the Permit	98 0 310 <45 (No Distinct Odour)	ug/m <sup>3</sup> CFU/m <sup>3</sup> CFU/m <sup>3</sup> Ou <sub>E/</sub> m <sup>3</sup>

## 1.2 Special Monitoring Requirements

There were no special requirements for sampling and analysis for this project. Bacteria and Aspergillus testing was carried out by the Irish Equine Centre Odour Analysis was carried out by OMI.

## 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
Defender 510 Calibrator	AX28	Calibration Certificate: 105163
Camera	-	-
PM <sub>10</sub> Sample Heads	AX09	-
PM <sub>10</sub> Sample Heads	AX10	-
PM <sub>10</sub> Sample Heads	AX11	-
Bio Stage Sampler	AX39	-
Flyte Sample Pump	AX41	Calibrated On site Before and After Sampling
Sterilizing Agent	-	Ethanol

Agent - Calibrated C

Agent - Calibrated C

Consent of convinent owner required for any other use

Consent of convinent owner required for any other uses

Table 5:	Reference			Site Permit No			Assess	Assessment by		Date	Date of Assessment	
Odour	O Toole Composting	mposting		WFP-CW-10-003-01	-01		Mark M.	Mark Mc Garry			24" October 2013	
	Observer is free from medical conditions (col	is free conditions	from (cold, suble)	Observer abstinence (30 min) from smoking, flavored drinks, scented toiletries, deodorisers	abstinence (30 min) from flavored drinks, scented deodorisers	min) fron	n Reason d Assesse Verifica	Reason for Odou Assessment - Complaint Verification, Routine, Other	Odour Complaint, itine, Other		Weather Conditions	
Pre- Assessme Ottssegard	Yes			Cotteg			Permit	Permit Requirement on Bi- Annual Basis	nent on		Overcast Breezy	
Source	Start time:		any of the character vey?	Do any of the odours experienced on site match in character those recorded during the off site survey?	during the distribution of the state of the	site mate ne off sit	e List Ar	List Areas Inspected: All Areas	cted:	What occur off si Activit	onsite du dour assess continued a	ring the ment?
Odour Investigat	Finish Time:	Nai	ential On-s nposting ac ste holding fic Moveme	site odours ident stivities areas ents	iffed;	Milet redition	iooses of			on site alteration on-going	- there is or unusual	was no activities
	Observer location	cation		Wind		Ē	Time for sur	Odour Rating	Rating		Description	
193ems189	Location	Sensitivity	Direction from which swold brink	Orientation (Observer vs facility)	Strength	Start Time	Period of noihernesdO	Odour The Persis and P	Odour Intensity	Descr	Description of Odours etc	o
suc	Facility Office	2	SE	Down Wind	2	11:00	45mins	e	-	Compost intermittent	Maturation	Building
Field servatio	Up wind	2	SE	Up Wind	2	12:30	45mins	0 0		None		
OP	Down Wind	8	SE	Down Wind	64	11.45	45mins	0	0	None		
Detail of any r None	neeting with I	ocal reside	ents/ comp	Detail of any meeting with local residents/ complaints received during the assessment None	during the	assessm	lent					

### Notes:

#### 1: **Observation Point Sensitivity**

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

#### Wind Strength 2:

Calm Smoke rises vertically: 0: Light Air Direction of wind shown by smoke drift, but not wind vanes; 1 Wind felt on face; leaves rustle, ordinary vane moved by wind; 2 Light Breeze Leaves and small twigs in constant motion; 3: Gentle Breeze Raises dust and loose saper, small branches are moved; 4: Moderate Breeze Twigs break off trees.
Slights fructural damage occurs.
Slights fructural damage occurs.
Obry, rained recently, drizzle, raining, foggy, to the control of t Small trees in leaf begin to sway; Fresh Breeze Large branches in motion, umbrellas used with difficulty; 6: Strong Breeze Near Gale 8 Gale Strong Gale

#### Weather Conditions 3:

- Precipitation
- Temperature

#### 4: **Odour Persistence**

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

#### **Odour Intensity** 5:

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

A	D	D	e	n	d	i	x	1

Calculations

Title:

Determination of Total Bacteria & Aspergillus Fumigatus

Method:

UK Composting Association Protocol

Client:

O Toole Composting

Log Sheet Complete by:

Mark McGarry

Test Date:

24th October 2013

Laboratory Used:

Irish Equine Centre

Site Name

O Toole Composting

Location

Upwind

Downwind

Site Offices

Total Bacteria

Site and site of the site of t

Total cfu

cful m3

Aspergillus

Aspergillus fumigatus

0

0

0.145

Volume of Air Sampled

Volume of Air Sampled

0.145

0 0.145 0

cfu/ m3

0

AXIS	
Ambient Air Survey May 2013	O Toole Composting Ltd Ballintrane, Co Carlow  Report Date: 18th June 2013
Report Number: 3190-13-01 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

09th May 2103

Monitoring Organisation:

AXIS environmental services

Address:

40 Coolraine Heights.

Laboratory

Johnstown Purple Leading Louise Land Countries Leading Leading

Consent Mark \*\*

Date of Report:

Report Approved By:

Function:

Environmental Manager

Signed:

10. Clay

## 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 atmosphere 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 after the
PM <sub>10</sub>	#EN92341
Aspergillus fumigatus	UK Composting Association Protocol
Total Bacteria	UK Composting Association Protocol
Odour Follying	EN 13725
Aspergillus fumigatus  Total Bacteria  Odour  For prinspray of the prinspr	EPA Guidance Document AG5

Table 2: Summary of Results

Monitoring Area	Substance	Method	Limits	Ambient Concentration	Units
Site 1 Up Wind of the Installation	PM <sub>10</sub> Aspergillus fumigatus Total Bacteria Odour Threshold Conc	EN 12341 Impactor Impactor Olfactometry	None applied in the permit	13.4 0 255 53 (No Distinct Odour)	ug/m³ CFU/m³ CFU/m³ Ou∈/m³
Site 2  Down Wind of the Installation	PM <sub>10</sub> Aspergillus fumigatus Total Bacteria Odour Threshold Conc	EN 12341 Impactor Impactor Olfactometry	None applied in the permit	17.5 0 117 72 (No Distinct Odour)	ug/m³ CFU/m³ CFU/m³ Oue/m³
Site 3 Facility Offices	PM <sub>10</sub> Aspergillus fumigatus Total Bacteria Odour Threshold Conc	EN 12341 Impastor and Impastor Oracemetry	None applied in the permit	53.7 0 95.7 78 (No Distinct Odour)	ug/m³ CFU/m³ CFU/m³ Ou <sub>E/</sub> m³

1.2 Special Monitoring Requirements

There were no special requirements for sampling and analysis for this project. Bacteria and Aspergillus testing was carried out by the Irish Equine Centre Odour Analysis was carried out by OMI.

## 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
Defender 510 Calibrator	AX28	Calibration Certificate: 105163
Camera	-	-
PM <sub>10</sub> Sample Heads	AX09	•
PM <sub>10</sub> Sample Heads	AX10	
PM <sub>10</sub> Sample Heads	AX11	
Bio Stage Sampler	AX39	-
Flyte Sample Pump	AX41	Calibrated On site Before and After Sampling
Sterilizing Agent	-	Ethanol

AXIS environmental services

Table 5:	Reference		The state of the s	Site Permit No	The second second		Asses	Assessment by			Date of Assessment	
Odour Assessment	O Toole Composting	mposting		WFP-CW-10-003-01	3-01		Mark N	Mark Mc Garry		0	09th May 2013	
	erver lical thro	is free conditions at, sinus tro	e from s (cold, ouble)	Observer abstinence (30 min) from smoking, flavored drinks, scented toiletries, deodorisers	nence (30 red drink prisers	min) fro s, scente		Reason for Odou Assessment - Complaint Verification, Routine, Other	Com tine,		Weather Conditions	
-919 meseseA Benegen9	Yes			Yes Co <sub>U</sub>			Permit	Permit Requirement Annual Basis	nent on	ά	Dry Day Light Air – Direction of wind shown by smoke drift, but not wind vanes	ਰਝ
Source n	Start time:	Sul Sul	Do any of the in character survey?	Do any of the odours experienced on site match in character those recorded during the off site survey?	Christo t	site mate he off si		List Areas Inspected:	cted:	> 0 0	What relevant activities were occurring onsite during the off site odour assessment?	0 0
oit		S			E.	ect.	All Are	35		⋖	Activities continued as normal	7
dour vestiga	Finish Time: 12:30		Potential On-site od Composting activities Waste holding areas	ours ic	tified:	owner res	atlo			ōmō	on site – there was no alterations or unusual activities on-going	o s
		Tre	Traffic Movements			<b>X</b> ,	ses c				,	
	Observer local	ation		Wind		F	Time of Solid	Odour Rating	tating		Description	
Parameter	Location	Sensitivity	Direction from which swold briw	noitentation ev reverver (villise)	chgnend	Start Time	Period of nothernation	Odoung Od	Odour Intensity	ă	Description of Odours etc	
suo	Facility Office	2	On site		2	10:15	45 mins		-	Compost	st Maturation Building ent	O)
Field itsv19	Up wind	4	N.	Up Wind	2	11:00	45 mins	0	0	None		
sqo	Down Wind	e	SE	Down Wind	2	11.45	45 mins	0	0	None		
Detail of any m	Detail of any meeting with local	1000	ents/ comp	residents/ complaints received during the assessment	luring the	assessm	ent					
Notice		STREET, STREET	STRONG OF STREET		AND DESCRIPTION OF THE PROPERTY OF THE PROPERT	encontrollectual processes						٦

## Notes:

#### 1: **Observation Point Sensitivity**

- Remote (no housing, commercial/ industrial premises, or public area within 500 metres of 1: the observation point);
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- Extra Sensitive: (complaints arising from residents, business and users of public areas 5 within area of observation point).

#### Wind Strength 2:

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 iromotion, umbrellas used with difficulty.
7:	Near Gale	Whole trees in protion;
8:	Gale	Twigs break off trees;
9:	Strong Gale	Slight structural damage occurs.
Weathe	r Conditions	on further diffe
1:	Precipitation	Dry, rained recently, drizzle, raining, foggy;
2:	Temperature in in	Cold, Cool, Warm, hot;
	Persistence GCOPyris	Whole trees in anotion. Twigs break off trees; Slight structural damage occurs. Cold, Cool, Warm, hot;
0:	No Odour;	

#### **Weather Conditions** 3:

- Precipitation
- Temperature

#### 4: **Odour Persistence**

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

#### **Odour Intensity** 5:

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

Appendix I	Calculations					
Title:	Determinat	tion of Total	Bacteria & A	spergillus Fumigatus		
Method:	UK Compost	ing Associatio	on Protocol			
Client:	O Toole Con	posting				
Log Sheet Complete	by: Mark McGari	ry				
Test Date:	09th May 20	13				
Laboratory Used:	Irish Equine	Centre				
Site Name	O Toole Com	O Toole Composting				
Location						
Downwind	Site 1					
Upwind	Site 2					
Site Offices	Site 3					
Total Bacteria	Site 1	Site 2	Site 3			
Total Bacteria	Run 1	Run 1	Run 1	Ø)*		
	isan i	Kun i	Noti 1	31 115C		
Total cfu	Site 1 Run 1  48 ed 0.188 255.3  ed 0.188,07 0 consent of consent	22	18	TIE.		
Volume of Air Sample	ed 0.188	0.188	CIL 88160			
cfu/ m <sup>3</sup>	255.3	117.0	ES 25,91			
		.0	ostiell			
Aspergillus		-0.70 T	Soft			
		action her				
Aspergillus fumigatus	0	SP OT	0			
Volume of Air Sampl	ed 0.188 6	188	0.188			
cfu/ m <sup>3</sup>	0 30	23, 0	0			
	i of C					
	seni					
	Con					

AXIS (SUIDMINIA STORES	
Ambient Air Survey June 2012	O Toole Composting Ltd Ballintrane, Co Carlow  Particle of the control of the con
Report Number: 3190-12-01 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:

27<sup>th</sup> June 2012

Monitoring Organisation:

AXIS environmental services

Address:

40 Coolraine Heights,

Laboratory:

Irish Equine Centres of Hor any other use.

Johnstown, Harrist Edition of the Centre o

Date of Report:

10th August 2012

Report Approved By:

Mark Mc Garry

Function:

**Environmental Manager** 

Signed:

10,00mg

## 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 atmosphere 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 Ise.
PM <sub>10</sub>	prEN12341
Aspergillus fumigatus	Composting Association
Plite	Protocol
Total Bacteria	UK Composting Association
. n.	Protocol
Total Bacteria  Odour  For Hills Total Bacteria	EN 13725
Odour Odour	EPA Guidance Document AG5

**Table 2: Summary of Results** 

Monitoring Area	Substance	Method	Limits	Ambient Concentration	Units
Site 1 Up Wind of the Installation	PM <sub>10</sub> Aspergillus fumigatus Total Bacteria Odour Threshold Conc	EN 12341 Impactor Impactor Olfactometry	None applied in the permit	29 None Detected 96 <57	ug/m <sup>3</sup> CFU/m <sup>3</sup> CFU/m <sup>3</sup> Ou <sub>E/</sub> m <sup>3</sup>
Site 2  Down Wind of the Installation	PM <sub>10</sub> Aspergillus fumigatus Total Bacteria Odour Threshold Conc	EN 12341 Impactor Impactor Olfactometry	None applied in the permit	40 None Detected 176 <55	ug/m <sup>3</sup> CFU/m <sup>3</sup> CFU/m <sup>3</sup> Ou <sub>E/</sub> m <sup>3</sup>
Site 3 Facility Offices	PM <sub>10</sub> Aspergillus fumigatus Total Bacteria Odour Threshold Conc	EN 12341 Impactor Impactor Olfactometry	applied in the permit	36 None Detected 344 <67	ug/m³ CFU/m³ CFU/m³ Ou <sub>E/</sub> m³

# 1.2 Special Monitoring Requirements to

There were no special requirements for sampling and analysis for this project. Bacteria and Aspergillus testing was carried out by the Irish Equine Centre Odour Analysis was carried out by OMI.

## 1.3 Summary of Equipment

**Table 3: Equipment Summary** 

Item	ID Number	Calibration Status
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Camera	- *	-
PM <sub>10</sub> Sample Heads	AX09	-
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Flyte Sample Pump	AX41	Calibrated On site Before and After Sampling
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Table 5:	Reference	di-		Site Permit No			Asses	Assessment by		Date o	Date of Assessment	
Odour Assessment	O Toole C	O Toole Composting		WFP-CW-10-003-01	3-01		Mark N	Mark Mc Garry		27 <sup>th</sup> Ju	27 <sup>th</sup> June 2012	
	Observer medical sore throa	Observer is free fromedical conditions (colsore throat, sinus trouble)	e from s (cold, rouble)	Observer abstinence (30 min) from smoking, flavored drinks, scented toiletries, deodorisers	nence (30 red drinks prisers	min) fror s, scente		Reason for Odou Assessment - Complaint Verification, Routine, Other	Complaint,	<b>L</b>	Weather Conditions	
Pre- Assessm Preparatio	Yes			Yes			Permit Requ	Permit Requirement Annual Basis	5	Bi- Dry Day Light Air - shown by s	Dry Day Light Air — Direction of wind shown by smoke drift, but not wind vanes	of wind ; but not
Source n	Start time: 14:00		Do any of the in character survey?	Do any of the odours experienced on site match in character those recorded during the off site survey?	enced on yduring the	site matc he off sit		List Areas Inspected:	ected:	What occur off site	What relevant activities were occurring onsite during the off site odour assessment?	ies were ring the ment?
oiti					SAL	~=X	All Areas	as		Activiti	continued	s normal
nobO sgiżesvnl	Finish Time:		Potential On-site odo Composting activities Waste holding areas Traffic Movements	urs ide	antified: City Manual State of City of	ection puriented	zos.			on site alteration on-going	- there s or unusual	was no activities
	Observer location	ocation		Wind		E	Only Only	Odour Rating	Rating		Description	
Parameter	Location	Sensitivity	Direction from which swold bniw	noitation ev erver vs (tylliost	Strength	Start Time	Period of noiservation of the following the	NobO Persistence	TuobO Viensinl	Descri	Description of Odours etc	etc
suo	Facility Office	2	On site	1	-	14:00	60 mins	-	-	Compost intermittent	Maturation	Building
Field ervati	Up wind	4	NN N	Up Wind	-	15:00	60 mins	0	0	None		
sdO	Down Wind	4	SE	Down Wind	-	16:00	60 mins	0	0	None		
Detail of any n	neeting with I	ocal resid	ents/ comp	Detail of any meeting with local residents/ complaints received during the assessment	during the	assessm	ent					
None												

## Notes:

#### 1: **Observation Point Sensitivity**

- Remote (no housing, commercial/ industrial premises, or public area within 500 metres of 1: the observation point);
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#### 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;
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6:	Strong Breeze	Large branches in motion, umbrellas used with difficulty;
7:	Near Gale	Whole trees in motion;
8:	Gale	Twigs break off rees;
9:	Strong Gale	Slight structural damage occurs.
	-	ath air

#### 3: **Weather Conditions**

Downstained recently, drizzle, raining, foggy; For the bold, Cool, Warm, hot; Precipitation 2: Temperature

#### 4: **Odour Persistence**

Intermittent (detected intermittently during the period of assessment); 1:

2: Persistent (detected throughout the period of the assessment);

#### 5: **Odour Intensity**

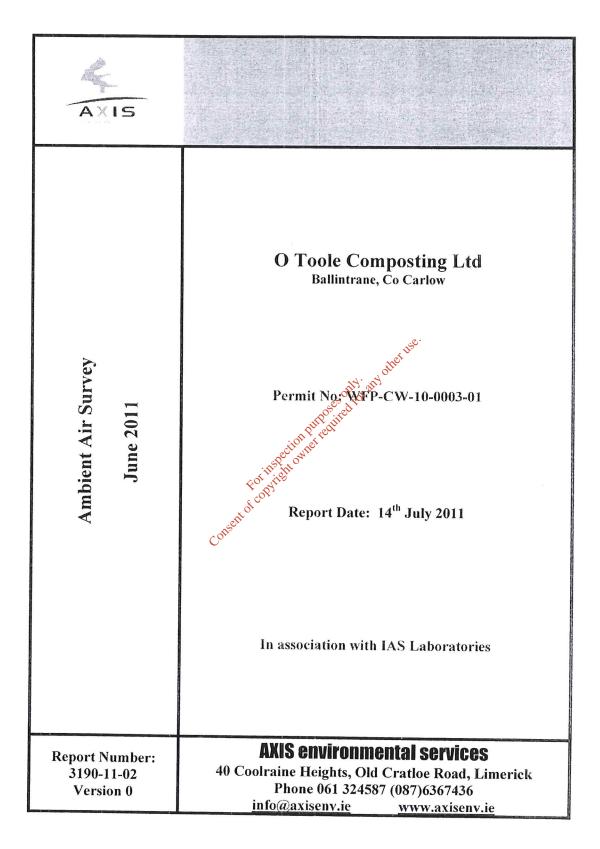
0: No detectable odour;

- Faint Odour (barely detectable, need to stand still and inhale facing into the wind); 1:
- 2: Moderate odour (easily detectable while walking and breathing normally, possibly
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- 4: Very Strong Odour (unbearable, difficult to remain in area affected by odour).

## Appendix I

## Calculations

Title:	<u>Determination of Total Bacteria &amp; Aspergillus Fumigatus</u>					
M ethod:	UK Compostin	g Association	Protocol			
Client:	O Toole Comp	osting				
Log Sheet Complete by:	Mark McGarry					
Test Date:	27th June 201	2				
Laboratory Used:	Irish Equine C	entre				
Site Name	O Toole Comp	oosting				
Location						
Downwind	Site 1					
Upwind	Site 2	•				
Site Offices	Site 3		Auge.			
Total Bacteria	Site 1	Site 2	Site 3			
	Run 1	Site 2. All Run 1d all	Run 1			
Total cfu	22 10	Pultedill 2011	53			
Volume of Air Sampled	0.212	0.212	0.212			
cfu/ m <sup>3</sup>	6.376.9ht	96	344			
Aspergillus	Run 1  22 0.212 chion 176 chi					
Aspergillus fumigatus	0	0	0			
Volume of Air Sampled	0.212	0.212	0.212			
cfu/ m <sup>3</sup>	0	0	0			



## 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:

02<sup>nd</sup> June 2011

Monitoring Organisation:

AXIS environmental services

Address:

40 Coolraine Heights,

Old Cratloe Road,

Laboratory:

Co Kildare specion purposes only any other use.

14th July 2017 the Mark Me Go

Date of Report:

Report Approved By:

Function:

Environmental Manager

Signed:

10,00mg

## 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 <sub>10</sub>	prEN12341
Aspergillus fumigatus	UK Composting Association Protocol
Total Bacteria	UK Composting The Association Protocol
Odour	NIOSH Memods 2542, 6013, 2002 6018
Odour	ERA Guidance Document AG5
Consent of copyright of	UK Composting Association Protocol NIOSH Methods 2542, 6013, 2002-6018  ERA Guidance Document AG5

Table 2: Summary of Results

Monitoring Area	Substance	Units	Limits	Ambient Concentration	Status
Up Wind of the Installation	PM₁₀ Aspergillus fumigatus Total Bacteria	ug/m³ CFU/m³ CFU/m³	50 500 1000	41 0 85	Compliant Compliant Compliant
Down Wind of the Installation	PM₁₀ Aspergillus fumigatus Total Bacteria	ug/m³ CFU/m³ CFU/m³	50 500 1000	33 0 100	Compliant Compliant Compliant
Facility Offices	PM <sub>10</sub> Aspergillus fumigatus Total Bacteria	ug/m³ CFU/m³ CFU/m³	50 500 1000	42 0 35	Compliant Compliant Compliant

## 1.2 Special Monitoring Requirements

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.

Summary of Equipment

Die 3: Equipment Summary

## 1.3 Summary of Equipment

**Table 3: Equipment Summary** 

ltem	COD 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 <sub>10</sub> Sample Heads	AX09	-
PM <sub>10</sub> Sample Heads	AX10	-
PM <sub>10</sub> 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		Units		
		Office	Upwind	Downwind	
Mercaptans	NIOSH 2542	<0.5	<0.5	<0.5	mg/m³
Hydrogen Sulphide	NIOSH 6013	<0.2	<0.2	<0.2	mg/m <sup>3</sup>
Ammonia	NIOSH 2002	<0.25	<0.25	<0.25	mg/m³
Amines	NIOSH 6016	<0.01	<0.01	<0.01	mg/m³

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O'Toole Compost Limited Ambient Air Survey Date. June 2011

Observer is free from Observer abstinence (30 min) from Reason for Oddur Weather Company medical conditions (cold, smoking, flavored drinks, scented Assessment - Compaint Start time:   Observer is free from Observer abstinence (30 min) from Reason for Oddur Weather Company (10 min) from Reason for Conductions)   Ves		Reference			Site Permit No		20 X 10 X	ASSESS	Assessment by	the Alberta	2000 - Date
Observer location   Observer   Start time:   Compasting areas   Comp	Odour Assessment	O Toole Cc	omposting		WFP-CW-10-003	3-01		Mark M	lc Garry		02 June 2011
Ves		Observer medical	is fre		Observer absti smoking, flavo	nence (30 red drink	min) fror s, scente	Farmer Comp	n for sment – ation, Rou	Odo Complair rtine, Othe	ur Weather Conditions t,
Start time: Do any of the odours experienced on site match in character those recorded during the off site of survey?  No survey?  No site odours experienced on site match in character those recorded during the off site of survey?  No site odours identified of survey?  No composition areas  14.00  Observer location	Assessmen	Yes			Yes			Permit	Requiren Basis	nent on t	
No	9031	Start time:		any of the	e odours experi those Recorded	enced on during t	site matc he off sit		eas Inspe	cted:	What relevant activities were occurring onsite during the off site odour assessment?
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14:00   Waste holding areas   14:00   Waste holding areas   14:00   Traffic Movements   Traffic Movement		Finish Tin		otential On-	site odours iden ctivities	A Parish				¥	on site – there was no alterations or unusual activities
Observer location  Mind  Location  Wind  Location  Wind  Location  Wind  Location  Wind  Location  Office  Office  Up wind  Down Wind  Down Wind  Observation  Odour  Start Time Odour  Office  Office		14:00	3 -	aste holding affic Movem	l areas ents	COMPRE	ion pi				, n
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Down Wind 4 SE Down Wind 2 12:00 70 mins 0 0	ıoiti	Up wind	4	NN N	Up Wind	2	10:30	70 mins	0		lone
10	sviesdO	Down Wind	4	SE	Down Wind	2	12:00	70 mins	0		lone