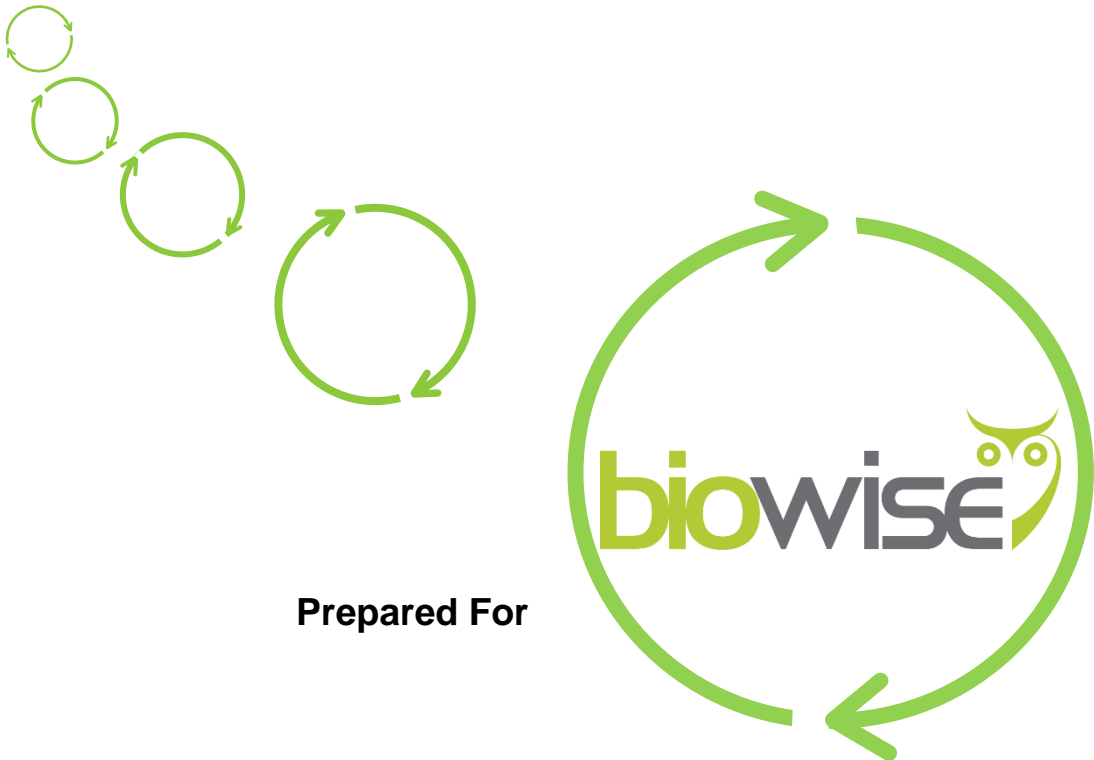




# H1 RISK ASSESSMENT ANNEX A

FINAL





Prepared For

We believe climate change is the greatest business and community challenge of our generation.  
WRM provide advice and action that makes a difference.

[www.wrm-ltd.co.uk](http://www.wrm-ltd.co.uk)



<b>Document Title:</b>	H1 Risk Assessment Annex A
<b>Revision:</b>	Final
<b>Date:</b>	17/04/2015
<b>Document Reference:</b>	BIO07a
<b>Prepared For:</b>	Biowise Ltd
<b>Project Reference:</b>	WRM/PR540/A14
<b>Copyright:</b>	WRM Ltd © 2015

Quality Control		
<b>Document Author</b>	Lauren Briggs	
<b>Quality Reviewer</b>	Ben Brown	

#### Copyright ©

All material on these pages, including without limitation text, logos, icons and photographs, is copyright material of WRM Limited. Use of this material may only be made with the express, prior, written permission of WRM Limited. This document was produced solely for use by the named contractee to whom the document refers.

## CONTENTS

<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>1</b>
1.1	Site Address .....	1
1.2	Operational Locations .....	1
1.3	Description .....	1
1.4	Permit Application .....	1
1.5	Assessment Process.....	1
<b>2.0</b>	<b>RISK ASSESSMENT .....</b>	<b>3</b>

## 1.0 INTRODUCTION

### 1.1 Site Address

Biowise Ltd  
Albion Lane,  
Willerby,  
Hull,  
East Yorkshire,  
HU10 6TS

### 1.2 Operational Locations

Site Grid Reference: 500500, 431896 (IVC Facility)

Site Grid Reference: 501172, 431336 (OWC, Wood and Soils)

### 1.3 Description

The site is located in Willerby, 7km west of Hull and approximately 14km from the M62. Willerby is situated approximately 2km to the south east of the site and Beverley 8km to the north east. Access to the site is via Albion Lane. The site is currently comprised of one area for open windrow composting, wood recycling and soils manufacture. An expansion of recycling activities is currently being applied for, with a proposed development of an in-vessel composting facility north of the current site within the former Little Weighton Railway Cutting.

### 1.4 Permit Application

Biowise Ltd (Biowise) is seeking permission to operate an in vessel composting (IVC) facility for treatment of comingled food and green waste. The facility falls within the remit of the Industrial Emissions Directive (IED) and this variation will result in a bespoke installation permit. In addition, the applicant wishes to consolidate existing variations of the current permit into one new permit following issue of this variation.

### 1.5 Assessment Process

This Annex to the H1 Environmental Risk Assessment gives a four-step process for assessing the site activity and the risk to local amenity:

1. Identify risks from your activity;
2. Complete risk assessments for these;
3. Choose appropriate measure to control these (if needed); and
4. Present your assessment.

This risk assessment will identify people or parts of the environment that could be harmed by the activity and carry out risk assessments for:

- Odour;

- Noise and vibration;
- Fugitive emissions (including dust and pests); and
- Visible plumes

## 2.0 RISK ASSESSMENT

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Odour from IVC entry/exit point. ORP Plan (1)	Aerial dispersion.	Local Residents	Med	Med	Med	Fairly probable for odour to occur on biowaste facilities. Doors in regular use for material receipt.	Site operated in line with best management practices. Odour Management Plan detailing odour management controls (BIO04). Reception hall under negative pressure drawing air in during door opening to prevent odour release. Fast acting roller shutter doors minimise time period of doors being opened.	Low
	Wind to N (16%)	Eppleworth Wood Farm						
	Wind to N-NE (16%)	Bungalow Cottage						
	Wind to NE (6%)	Green Lane Farm						
	Wind to N-E (21%)	White House Farm						
	Wind to SE (6%)	Albion Mill						
	Wind to S (16%)	Church Farm						
	Wind to S-SW (38%)	Rawdales Farm						
	Wind to SW-W (47%)	Golf Course						
Odour from open windrows on pad. ORP Plan (5)	Aerial dispersion.	Local Residents	Med	Med	Med	Fairly probable for odour to occur on biowaste facilities. Odour annoyance will be higher during summer months when receptors are outdoors.	Site operated in line with best management practices. Odour Management Plan detailing odour management controls (BIO04).	Low
	Wind to N (16%)	Eppleworth Wood Farm						
	Wind to N-NE (16%)	Bungalow Cottage						
	Wind to NE (6%)	Green Lane Farm						
	Wind to N-E (21%)	White House Farm						
	Wind to SE (6%)	Albion Mill						
	Wind to S (16%)	Church Farm						
	Wind to S-SW (38%)	Rawdales Farm						
	Wind to SW-W (47%)	Golf Course						
Odour from failure of biofilter	Aerial dispersion.	Local Residents	Low	High	High	Unlikely due to service agreement and spare parts held on site to prevent lengthy shut down of system.	If system fails then incoming waste is diverted until system back up and running.	Low
	Wind to N (16%)	Eppleworth Wood Farm						

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
treatment unit. ORP Plan (3)	Wind to N-NE (16%)	Bungalow Cottage					Spare components held on site to prevent delays awaiting parts. Odour Management Plan detailing emergency response (BIO04). Service contract for 24/7/365 support from technology provider.	
	Wind to NE (6%)	Green Lane Farm						
	Wind to N-E (21%)	White House Farm						
	Wind to SE (6%)	Albion Mill						
	Wind to S (16%)	Church Farm						
	Wind to S-SW (38%)	Rawdales Farm						
	Wind to SW-W (47%)	Golf Course						
Odour from the unloading of tunnels. ORP Plan (2)	Aerial dispersion.	Local Residents	Med	Med	Med	Fairly probable for odour to occur on biowaste facilities. Odour annoyance will be higher during summer months when receptors are outdoors.	Site operated in line with best management practices. Odour Management Plan detailing odour management controls (BIO04). Material fully aerated prior to unloading.	Low
	Wind to N (16%)	Eppleworth Wood Farm						
	Wind to N-NE (16%)	Bungalow Cottage						
	Wind to NE (6%)	Green Lane Farm						
	Wind to N-E (21%)	White House Farm						
	Wind to SE (6%)	Albion Mill						
	Wind to S (16%)	Church Farm						
	Wind to S-SW (38%)	Rawdales Farm						
	Wind to SW-W (47%)	Golf Course						
Odour from the reception of waste at the OWC site. ORP Plan (4)	Aerial dispersion.	Local Residents	Med	Med	Med	Fairly probable for odour to occur on biowaste facilities. Odour annoyance will be higher during summer months when receptors are outdoors.	Site operated in line with best management practices. Odour Management Plan detailing odour management controls (BIO04). No sensitive receptors within 250m of OWC reception area. Material processed within 7 days to prevent degradation prior to treatment.	Low
	Wind to N (16%)	Eppleworth Wood Farm						
	Wind to N-NE (16%)	Bungalow Cottage						
	Wind to NE (6%)	Green Lane Farm						

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
	Wind to N-E (21%)	White House Farm						
	Wind to SE (6%)	Albion Mill						
	Wind to S (16%)	Church Farm						
	Wind to S-SW (38%)	Rawdales Farm						
	Wind to SW-W (47%)	Golf Course						
Odour from the storage of finished product. ORP Plan (6)	Aerial dispersion.	Local Residents	Low	Med	Med	Low probability given the age of the material post processing. No sensitive receptors within 250m of the storage of finished product.	Site operated in line with best management practices. Odour Management Plan detailing odour management controls (BIO04). Material has met the requirements of the processing standard and is fully mature.	Low
	Wind to N (16%)	Eppleworth Wood Farm						
	Wind to N-NE (16%)	Bungalow Cottage						
	Wind to NE (6%)	Green Lane Farm						
	Wind to N-E (21%)	White House Farm						
	Wind to SE (6%)	Albion Mill						
	Wind to S (16%)	Church Farm						
	Wind to S-SW (38%)	Rawdales Farm						
	Wind to SW-W (47%)	Golf Course						
Odour from the storage of leachate. ORP Plan (7)	Aerial dispersion.	Local Residents	Low	Med	Med	Low probability given the storage of leachate in fully bunded sealed tanks with covers.	Site operated in line with best management practices. Odour Management Plan detailing odour management controls (BIO04). Leachate tanks are regularly inspected to ensure integrity including sniff testing.	Low
	Wind to N (16%)	Eppleworth Wood Farm						
	Wind to N-NE (16%)	Bungalow Cottage						
	Wind to NE (6%)	Green Lane Farm						
	Wind to N-E (21%)	White House Farm						
	Wind to SE (6%)	Albion Mill						



Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
	Wind to S (16%)	Church Farm						
	Wind to S-SW (38%)	Rawdales Farm						
	Wind to SW-W (47%)	Golf Course						
Airborne dust particulates from the turning of wastes. Open windrow site plan (6)	Deposition from air.	There are no residential properties within 250m of the OWC pad.	Med	Low	Med	Potential for frequent and long term exposure for people working close to the site (apart from licence holder/operator and employees).  There are no residential properties within 250m of the OWC pad..	Waste inputs at the IVC will have high moisture content so the production of dust will be minimal. Waste materials within 250m of sensitive receptor will be handled within an enclosed building. Prior to unloading the material will be assessed for moisture content, any material considered dry, by grip test, will be wetted with clean water. Daily site inspections.	Low
Airborne particulates generated during the movement of materials onsite. Transport between IVC and OWC sites.  Open windrow site plan (5) and IVC site layout plan.	Deposition from air.  Wind to the N. (16%)	Eppleworth Wood Farm	Med	Low	Low	Potential for frequent and long term exposure for people working close to the site (apart from licence holder/operator and employees).  There is only one place of work within 250m of the site boundary.	Most waste inputs will have high moisture content so the production of dust will be minimal. The site will be kept clean and dust suppression will be used to dampen internal roads by application of clean water. Material will be assessed by site prior to unloading and transportation, clean water can be added if required to increase the moisture content, as indicated by grip test. Daily site inspections Dust suppression applied to internal roads as indicated by visual inspection of roads where dust plumes being generated. Site speed limit to 10mph.	Low
Airborne particulate generated during the screening of wastes.  Open windrow site plan (6)	Deposition from air.	No residents within 250m of screening activities.	Low	Low	Low	Potential for frequent and long term exposure if anyone is living or working close to the site (apart from licence holder/operator and employees).  There are no places of work within 250m of screening operations.	Waste for screening has a high moisture content so the production of dust will be minimal. There are no sensitive receptors within 250m of screening operations.	Negligible

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Noise from machinery as listed in EMS (BIO02).	Air transport. Wind to N 16%	Eppleworth Wood Farm	Med	Low	Med	Neighbouring business often sensitive to noise and likely to complain.  One place of work within 250m of the site boundary.	Machinery maintenance schedule. Machinery movements not to occur outside of working hours. Bunding and landscaping surrounding the site. Noise Impact Assessment demonstrates minimal impact from installation.	Low
Scavenging birds and animals. IVC site layout plan reception hall and tunnels.	Air transport and over land	Eppleworth Wood Farm	Med	Med	Med	Scavenging birds and vermin attracted to site and affecting neighbouring businesses.  One place of work within 250m of the site boundary.	Fugitive Emissions Management Plan details process for dealing with source. Hire of professional pest controllers as required.	Low
Fugitive releases of litter. Open windrow site plan (6)	Air transport.	Eppleworth Wood Farm	Med	Low	Med	Local residents/local farmers/local businesses sensitive to litter and likely to complain.  One place of work within 250m of the site boundary.	Waste are inspected on arrival and turned away if contamination levels exceed levels stated in the sites Management System. Daily inspection of site and removal of litter. Installation of litter nets as required. No receptors within 250m of open windrows activities.	Low
Pests e.g. flies. OWC site and IVC site.	Air transport and over land.	Eppleworth Wood Farm	Med	Med	Med	Insect pests can multiply on some permitted waste types particularly in summer months.  One place of work within 250m of the site boundary.	Fugitive Emissions Management Plan details process for dealing with source. Control of pests through a pest control contractor as required. All food wastes which are most likely to attract flies and pests are treated within an enclosed building. Housekeeping	Low
All on site hazards particularly relating to waste handling and storage activity.	Direct physical contact.	Eppleworth Wood Farm	Med	Med	Med	Waste types are non-hazardous therefore only low risk.	No public access to the site. Site access gated and locked during out of hours. Signs outlining onsite risks. All wastes to be accepted are non-hazardous.	Low
Leachate with high organic content. Stored in leachate storage tanks at IVC and OWC sites. IVC site layout plan (leachate	Surface runoff due to tank failure.	No surface waters within 1km of site boundary	Low	Med	Med	Waste types are non-hazardous therefore only moderate risk.  There are no surface waters within 1km of the site boundary.	All waste materials stored and processed on an impermeable pavement and sealed drainage. Leachate tanks operated within 90% capacity and banded to 110% capacity in case of failure. Accident management plan outlines a methodology for loss of site liquid wastes/leachate to surface waters. There are no surface waters within 1km of the site boundary.	Negligible

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
tank) and Open windrow site plan (C)								
Leachate from material with high organic content. Produced from waste materials stored and processed. IVC site layout plan (leachate tank) and Open windrow site plan (C)	Direct run off from reception and processing areas of both sites.	No surface waters within 1km of site boundary	High	Med	Med	There are no surface waters within 1km of the site boundary.	Impermeable concrete hardstanding on all areas where organic wastes are stored or processed. Sealed drainage system servicing all areas. No point source emissions. Accident management plan outlines emergency procedures. There are no surface waters within 1km of the site boundary.	Negligible
Leachate with high organic content generated from tank failure or direct runoff as above. IVC site layout plan (leachate tank) and Open windrow site plan (C)	Permeate flow through soil.	Ground Water	High	High	High	Site located within a groundwater source protection zone (SPZ) 2.	Impermeable concrete hardstanding on all areas where organic wastes are stored or processed. Sealed drainage system servicing all areas. No point source emissions. Accident management plan outlines emergency procedures.	Low
Fire on site leading to run off from polluted firefighting waters from all waste processing areas. All site areas.	Direct and indirect run off.	Ground Water	Med	High	Med	Fires can be deliberate or accidental. Although high in moisture content compost can combust if not monitored and managed.	Impermeable concrete hardstanding on all areas where organic wastes are stored or processed. Sealed drainage system servicing all areas. No point source emissions. Routine temperature monitoring of compost piles to manage internal temperatures to prevent spontaneous combustion. Accident management plan outlines emergency procedures.	Low

Pollutant Model			Judgement				Action	
Source	Pathway	Receptor	P	C	M	Justification of Magnitude	Risk Management	Residual Risk
Visual plumes from waste activities	Visual	Local residents	N/A	N/A	N/A	No plumes produced as combustion does not take place on site.	Not applicable – screened out.	None
P = Possibility C = Consequence M = Magnitude								

**WRM Limited**

Churchill House, 90 Boroughgate, Otley, West Yorkshire  
LS21 1AE

Tel: 01943 468138  
Fax: 01943 461586

Email: [info@wrm-ltd.co.uk](mailto:info@wrm-ltd.co.uk) Web: [www.wrm-ltd.co.uk](http://www.wrm-ltd.co.uk)

**Copyright and Non-Disclosure Notice**

The contents and layout of this report are subject to copyright owned by WRM (©WRM Limited), save to the extent that copyright has been legally assigned by us to another party or is used by WRM under licence. To the extent that we own the copyright in this report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in this report.

The methodology (if any) contained in this report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of WRM. Disclosure of that information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests.

