Permit Variation

EPR/EB3007MG

Acton Composting Site

Veolia ES Landfill Limited

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1. Introduction

1.1. Background

Acton Composting Site 'the Facility' which is operated by Veolia ES Landfill Limited 'VES' uses open windrow techniques to generate soil improvement products from green waste inputs for use in agriculture.

The composting activity has been operating at the Acton site for approximately 15 years. The site currently produces peat free compost to the BS PAS 100 specification and is Quality Protocol certified. Green waste is accepted mainly from long term contracts with Local Authorities including Newcastle-Under-Lyme and Dudley. This application is seeking to increase the permitted annual throughput of the site by 5,000 tonnes per annum to 35,000 tonnes per annum.

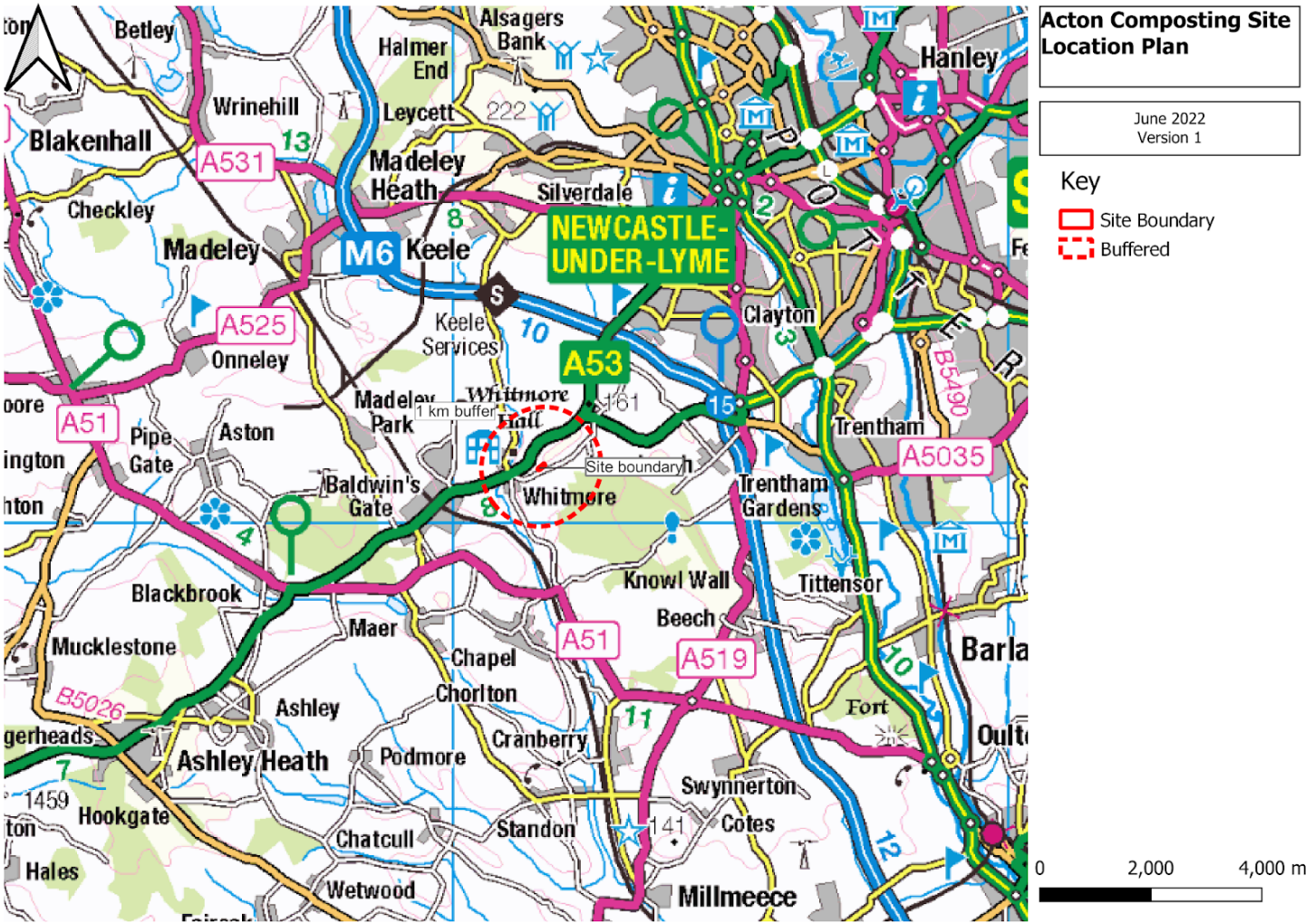
1.2. Site location

The Facility is in a rural location (Grid Reference SJ 81597 41007) between the villages of Acton and Whitmore which are small settlements approximately 3km from the outskirts of Newcastle-under-Lyme. The site is located on an area of land which forms part of a larger area of restored sand and gravel workings.

The Facility is accessed from a track off Acton Lane which links the site to Trentham Road (A5182) and subsequently Whitmore Road (A53). The Facility is remote with no human receptors closer than 320m. There is a protected habitat (deciduous woodland) which borders the Facility to the north but no other statutory ecological receptors including SSSI, SAC, SPA, RAMSAR within 1km. The site falls under the Local Authority Jurisdiction of Staffordshire County Council and Newcastle-under-Lyme District Council.

Overall the site is ideally suited to composting activities and is at low risk of causing an adverse impact due to the small scale of the activity and remote location.

Facility location



1.3. Permit changes / activity types

The following activity will need to be included with the permit. These are outlined below:

Changes requested as part of this variation

Permit change	Description	Limits
Addition of composting activity	An installation activity [Section 5.4A(1)(b)(i), biological treatment with a throughput greater than 75 tonnes per day] will be added to the permit along with associate DAA.	Activities will include: Composting of waste under aerobic conditions in open systems such as outdoor turned windrows or aerated static piles on impermeable surface with a sealed drainage system. ■ Composting, sanitisation, stabilisation and maturation (R3) ■ Storage of materials associated with composting activities (R13) ■ Physical treatment activities associated with the composting activity including shredding and screening.
Addition of storage Directly Associated Activity 'DAA'	Storage of waste pending the R3 operation (excluding temporary storage, pending collection, on the site where it is produced).	Storage of waste on an impermeable surface with a sealed drainage system (R13).

The requested changes to the permit are supported by the following documentation:

- A supporting statement outlining the proposed changes and associated assessments [this document]
- Application forms
- Revised site plans and drawings
- Revised Odour Management Plan 'OMP'
- Fire Prevention Plan 'FPP'
- An Environmental Risk Assessment 'ERA'
- BAT Assessment

- Other supporting information including: Technical competency, EMS Summary, Letter of Authority, Directors Details

2. Activity descriptions

2.1. Outline description of the composting activity

The updated composting activity will continue to operate similarly to the existing well established operation.

2.1.1. Reception / Acceptance

Green waste such as hedge, tree and grass clippings and other biodegradable green waste arising, is delivered to site in vehicles collecting principally from Local Authority kerbside collections, Local Authority Household Waste Reception Centres 'HWRC' and landscape contractors, tree Surgeons, Local Authority Parks Departments, Local Authority green waste kerbside collection schemes. Material is weighed over the weighbridge and directed to the tipping area. The description, nature and source of wastes are verified at the weighbridge. Details of the waste carrier, waste type (EWC code), client / source and quantity (tonnes) of waste are recorded on WIMS and / or on a Waste Transfer Note. The facility does not accept any hazardous waste.

Following tipping, the accepted green waste is inspected for signs of contamination and where loads are not grossly contaminated litter / contrary items are removed to a 'rejects container'. A system is in place to reject incoming waste that is partly or wholly unsuitable and does not conform to the site specific operational constraints.

2.1.2. Shredding and conditioning

Suitable material is then shredded soon after arrival to site in order to reduce the volume and promote stabilisation of the composting process in order to ensure the material is suitable to pass through the critical limits and checks within the PAS100 quality protocol.

2.1.3. Windrow formation

The shredded material is then formed into trapezoidal-shaped windrows in the central area of the site each row running lengthways east to west. Each windrow is approximately 25-30m in length and will hold approximately 540-500 tonnes of green waste.

2.1.4. Sanitisation

This in process material then undergoes sanitisation where the material heats in the early stages of the composting process as microbial degradation accelerates which

results in denaturing of weeds, seeds and pathogens. Monitoring of temperature and moisture is carried out throughout this stage on a daily basis to ensure a required range of 60 - 70 °C. This is achieved through insertion of a temperature probe into the core zone of the windrow. The windrows are turned during the sanitisation process to ensure there is uniform mixing and heat distribution and introduce oxygen ensuring decomposition remains aerobic. Sanitization is complete once the requirements of PAS 100CQP are met.

2.1.5. Stabilisation

The windrows then enter a stabilisation phase where they are monitored weekly according to the PAS 100 CQP with moisture addition continuing as required. Monitoring of temperature is carried out to ensure a required range of 45 - 70 °C. The critical control points and critical limits of composting during the actively managed composting phase (sanitisation and stabilisation phases) are identified within the site specific PAS 100 HACCP analysis.

2.1.6. Refining and inspection

Sanitised, stabilised material is screened to remove stoney material unsuitable for further composting, a light fraction including plastic contamination and the generally woody bulky 'oversized' fraction. The oversized fraction is steadily returned into the shredding stage of the composting process. This is carried out to ensure optimum blending of carbon rich woody and nitrogenous e.g. grass is achieved to stabilise and manage the rate of composting.

2.1.7. Record keeping

Records are kept Traceable, logging, batch monitoring and record keeping

- the results of the quality of input materials assessment,
- blending ratio,
- windrow size,
- temperature and moisture monitoring,
- date when batch was watered,
- date of turns,

- end of sanitisation,
- end of stabilisation phase,
- screening dates and screen size,
- the unique number of any other batches mixed with this batch (including oversize),
- if and when samples for PAS 100 were taken,

2.1.8. Corrective actions

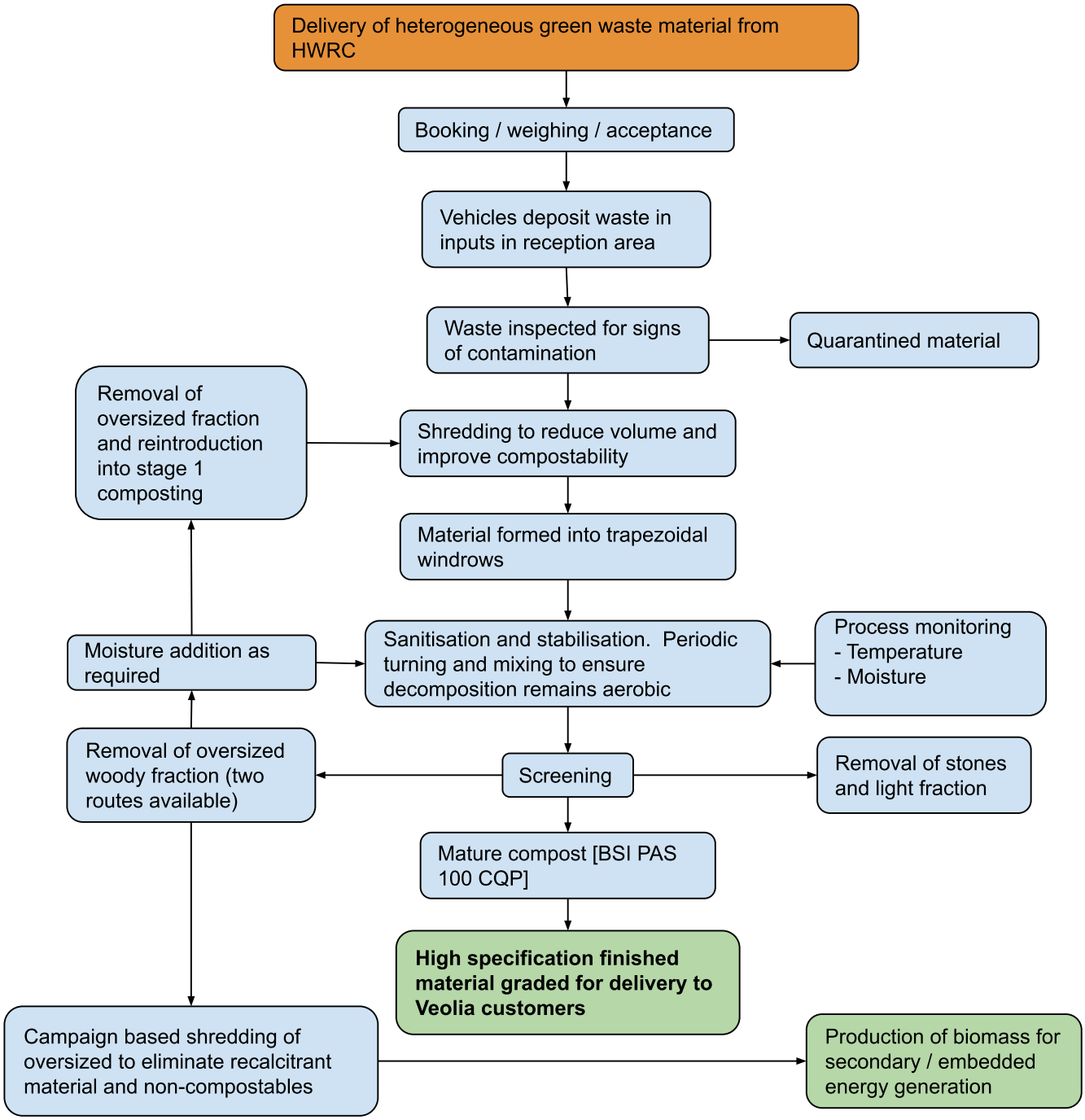
Corrective actions are carried out if windrow core zone temperature trends move out of the target range or if it takes longer than 48 hours for core zone temperature to return to within the target range after batch turning/mixing.

Corrective action to raise the windrow temperature may include;

- Additional or more frequent windrow turning
- Amending the size / shape of the windrow
- Moisture addition if required

Any corrective action taken to bring windrow core temperatures or moisture conditions within the target ranges shall be recorded.

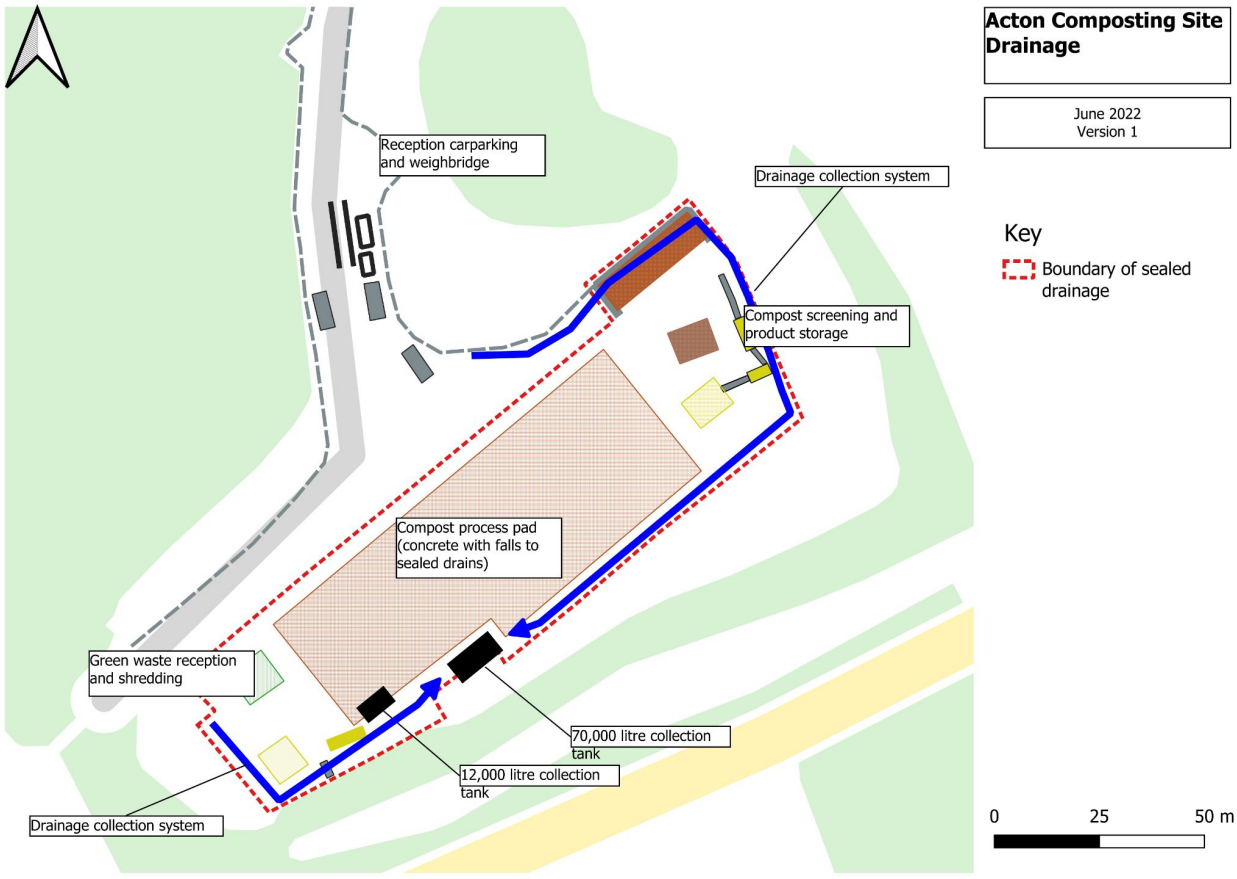
2.2. Composting process flow diagram



3. Drainage

There will be no changes to the drainage system required as part of the proposed modifications to the permit. In order to ensure piles of waste and product remain free draining the operational area comprises a large impermeable slab constructed of fully engineered reinforced concrete, laid to falls, with a sealed drainage system directed to a collection sump in the central southern site of the slab. A raised kerb of minimum 100mm channels water towards the drain entry point preventing any water leaving the site. The leachate collection system comprises two underground tanks 70m^3 and 12m^3. The water levels in the tanks are inspected daily and emptied proactively with the extracted material spread to land under a deployment.

Arrangement of infrastructure for surface water transfer to leachate treatment plant (south west quadrant of the compost pad)



As an existing facility the segregation of surface water and process water is not carried out however the footprint of the pad is compact meaning it is fully utilised for waste / product.

4. Throughput and waste types

4.1. Windrow composting activities

4.1.1. Annual throughput

Annual throughput for compost activity inputs will not exceed 35,000 tonnes per annum.

4.1.2. Waste types

There are no changes proposed to the waste types which will be accepted by the Facility.

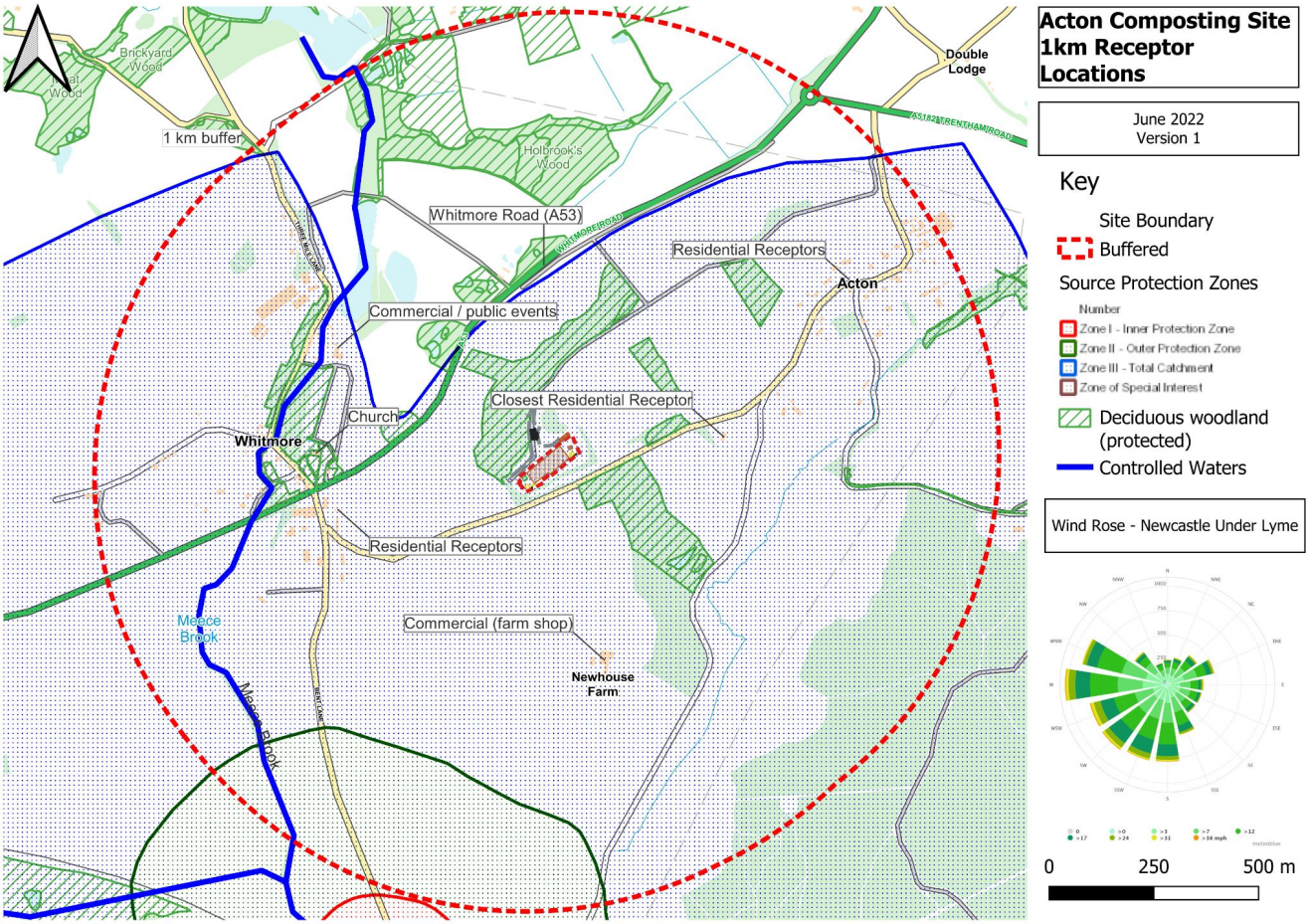
5. Environmental Risk Assessment

5.1. Summary of ERA and site sensitivity

The following section is a summary of the outcome of key aspects and impacts assessed in the ERA carried out in relation to the proposed permit changes. In the ERA these are separated by activity type i.e. wood recycling and composting but are dealt with together below as the activities have a similar risk profile.

The figure below gives an overview of the site setting in relation to human and environmental receptors against a 1km buffer. The location of the site means that it has a very low amenity risk profile which is reflected and confirmed based on VES's experience operating the Facility. A more detailed description of each receptor of receptor type is provided in the following table.

Human and ecological receptor locations (1km buffer)



Human and ecological receptor descriptions

Receptor (non VES)	Type	Distance to site boundary (m)	Direction from site	Grid reference	
				x	y
Principal Aquifer (SPZ3)	Groundwater	0	N/A	381596	341006
Principal Aquifer (SPZ1)	Groundwater	1000	South	381192	339999
The Rookery Deciduous woodland	Protected habitat	10	North	381545	341029
Acton Lane	Residential	320	East	382002	341073
Three Mile Lane	Commercial, site of historical interest inc public events / weddings	500	North west	381090	341270
Three Mile Lane	Church	490	West	381037	341034
Three Mile Lane	Commercial, tea rooms	510	West	380998	340972
Acton Lane / Brent Lane	Residential	410	West	381090	340874
Track off Acton Lane	Commercial, farm shop	450	South	381718	340527

5.2. Bioaerosols

5.2.1. Previous monitoring

Bioaerosol monitoring is currently carried out at the site on an annual basis so there is empirical data available to review.

The composting site is located within a rural setting with the closest receptor 320m from the boundary. As a result the risk of bioaerosol emissions is low, this is further reduced due to the scale of the activity. The agricultural setting means that there are other potential sources of bioaerosols within close proximity to the composting activity. These include spreading, manure storage and other agricultural activities.

The table below summarises the results of bioaerosol monitoring from September 2017 to September 2021. The table describes when the median concentration of Aspergillus fumigatus at upwind and downwind locations are above 500 cfu/m^3 or whether the concentration of Mesophilic bacteria at the same locations are above 1,000 cfu/ m^3.

What the data shows is that there were no occasions when the downwind concentration of A.Fumigatus or Mesophilic bacteria were in excess of the above screening criteria. This is reflective of the low risk setting of the site with respect to the external impact of bioaerosols.

Summarised conclusions from periodic bioaerosol monitoring

Date of monitoring	A.Fumigatus		Mesophilic Bacteria	
	UW	DW	UW	DW
September 2017	✓	✓	✓	✓
September 2018	✓	✓	✓	✓
September 2019	✓	✓	✓	✓
September 2020	✓	✓	✓	✓
September 2021	✓	✓	✓	✓

UW [Up wind wind location]
DW [Down wind sampling location]
✓ - Below screening threshold of 500 cfu/m^3 (A. fumigatus) or 1,000 cfu/ m^3 (Mesophilic bacteria)
❌- Above screening threshold of 500 cfu/m^3 (A. fumigatus) or 1,000 cfu/ m^3 (Mesophilic bacteria)

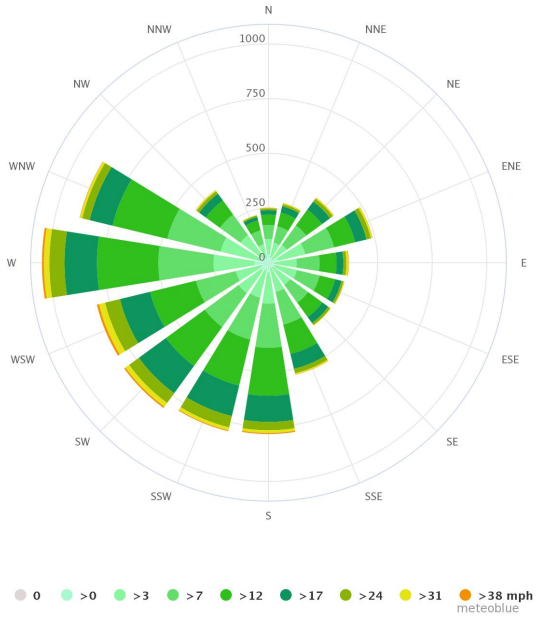
5.2.2. Risk assessment and controls

Appropriate controls are in place to minimise bioaerosol emissions in accordance with BAT requirements including:

- Turning of active windrows is undertaken the minimum number of times required to ensure a high grade end product. These practices are well established at the site and within the wider business.
- Wind direction is considered when undertaking turning and can be delayed in conditions where even with controls in place off site impacts could be unacceptable.
- The shredder operates at slow speed to prevent release of dust.
- Speed restrictions are in place at the site to minimise disturbing fugitive emissions.
- Waste acceptance procedures are in place with conditioning (moisture control) of inputs if required.

- Monitoring of moisture content during the composting process and hydrating the windrows as required to avoid the formation of a dry fraction susceptible to transport by wind. Temperature and moisture readings will determine when the windrows will need additional dampening. Steaming of windrow s will be reduced by ensuring the compost pile is within the correct temperature range
- Regular cleaning of the compost pad is undertaken to avoid formation of dry crust / residue from which loose material can be liberated during vehicular movements or wind friction and transported off site.
- An updated Fire Prevention Plan 'FPP' will be in place to control the risk of fires. Fires and the aftermath could increase the potential for dry material to spread from the site and the presence of the revised suite of controls minimises the potential for this to occur.
- Equipment involved in the shredding and screening activities will be subject to planned preventative maintenance, cleaning and will be fitted with water spray systems which can be operated as required.
- Routine visual assessments of dust levels are carried out with a process in place for corrective actions.
- Material transportation from the shredding area to the composting area, and for final product out of site, takes place under sheeted vehicles
- Activities on site are undertaken in line with appropriate guidance and best practice to produce PAS100 and QP certified end product.

Windrose for Newcastile-Under-Lyme



5.2.3. Continued monitoring

VES is proposing to continue to carry independent monitoring for bioaerosols. The results of continued monitoring will be reviewed as appropriate with modification to the activity should results indicate the potential for adverse impact.

5.3. Fire prevention

A site specific Fire Prevention Plan ‘FPP’ has been prepared as a standalone document included with the application. All waste will be stored within the pile size limits and duration specified within the FPP guidance.

5.4. Odour

The likelihood of odour from the new facility causing offence to human senses at sensitive receptors is low. The closest residential receptor is 320m to the east. The composting activity is an existing well established operation and does not attract odour complaints from the local community.

The site is operated in accordance with an Odour Management Plan ‘OMP’ which assesses and implements controls to minimise with the aim of minimising the potential for off site impacts.

These include but are not limited to:

- Minimisation of residence times.
- Optimisation of aerobic treatment. Avoidance of conditions leading to anaerobic conditions within the windrow.
- Management of feedstock blending to stabalise the composting process.
- Turning of piles prevents anaerobic decomposition with odours associated with a reducing chemistry. Piles are actively managed to optimise turning frequency to the minimum required.
- Assessment of meteorological conditions is undertaken before turning (wind direction) etc.
- Management of the piles to achieve BS PAS 100 QP requires process monitoring and consistency.
- Implementation of daily yard cleaning as required.
- All feedback including complaints and non-conformances are recorded and reviewed with corrective and preventive actions put in place.

5.5. Dust

The ERA assessment carried out for this application has determined that the likelihood of dust emissions from the new facility causing a risk to the environment is considered to be low.

The shredder operates at low speed only at Acton. The moisture content and composition of the stabilised material reduces the risk of dust generation when screening.

Implementation of a stand alone Dust Emission Management Plan ‘DEMP’ is not considered necessary for the composting activity. The cross cutting controls and surveillance in place elsewhere in the EMS and wider management system are appropriate and proportional to the risks.

These include but are not limited to:

- Daily yard cleaning.
- Waste acceptance checks.

- Vehicular speed restrictions.
- A cleaning rota is in place to manage dust and debris.
- Deep clean to take place a minimum of twice per annum and includes removal of waste from area being cleaned and hosed down.
- All loads of waste entering and exiting the site will be sheeted or otherwise contained.
- Shredder only operate at slow speed.
- Every load tipped has visual inspection with clearly defined acceptance criteria.
- All feedback including complaints and non-conformances are recorded and reviewed with corrective and preventive actions put in place.
- Daily yard cleaning.
- Waste to be stored on hardstanding.
- Visual inspection of dust levels on a daily basis.

5.6. Noise

The ERA has assessed the impact from noise and has determined that the impacts can be screened out qualitatively with no need for further detailed assessment. Specific noise sources on site will continue to include vehicular movements, loading and unloading activities, movement of material around site, reversing sirens shredding and screening. The types of material being handled are not inherently noisy when mechanically handled or processed. The most prominent noise sources are shredding activities. As a result of the combination of these being operated using low speed drives and the intrinsic properties of the material being processed emissions from these activities are not likely to cause pollution off site. Current operations do not attract noise complaints from the local community. Off site noise monitoring is conducted in accordance with the planning condition and has not indicated there is a problem with emissions.

Implementation of a stand alone Noise Management Plan ‘NMP’ is not considered necessary for either wood or composting activities. The cross cutting controls and surveillance in place elsewhere in the EMS and wider management system are appropriate and proportional to the risks.

These include but are not limited to:

- Routine qualitative noise monitoring
- PPM regime in place for all equipment
- Daily checks of equipment for abnormal operation
- All feedback including complaints and non-conformances are recorded and reviewed with corrective and preventive actions put in place

5.7. Technical competence

This Veolia location uses EU Skills Scheme, CMS certification to demonstrate technical competence.

The Competence Management System, which is approved in England by the Department for Environment, Food & Rural Affairs (Defra) and the Environment Agency in Wales by the Welsh Government and Natural Resources Wales and in Scotland by the Scottish Environment Protection Agency (SEPA) is based on the principles a Management System e.g. ISO14001, ISO9001. The system is accredited by UKAS (SO/IEC 17021-1: 2015 for the Competence Management Standard). The system is externally certified and audited by Lloyds Register (LRQA).

As a result Veolia as a company, defined by activities are deemed as competent through implementation of management system competency requirements. Compliance to the scheme is met by having appropriately trained persons on site in line with our management system requirements.

Each member of staff on site is competent in the job that they undertake, this is reflective of the complexity of the role and the level of responsibility. For those who are responsible for the site, there are additional E learning modules and follow up work that are completed as part of the process.

A training matrix for all site personnel is in place and updated with all personnel trained according to the requirements of their role,
Including CMS refreshers.

The Competence Management System, which is approved by the Department for Environment, Food & Rural Affairs (Defra), the Welsh Government the Environment Agency and Natural Resources Wales is based on the principles a Management System e.g. ISO14001, ISO9001. It is a technical scheme that enables operators to demonstrate technically competent management of their permitted activities. The CMS does not

require a named technically competent manager per site, however, a management representative should be available to deal with any issues that may have an impact on compliance with the conditions of an environmental permit. There is also no requirement to log site attendance time as it is a holistic approach and recognises that all employees on a site contribute to the overall performance of the site.

A copy of the relevant CMS certification is included with the application.

5.8. Management systems

Veolia ES Landfill Limited is a quality assured company with its sites registered under the Quality Management System ISO 9001, OHSAS 18001 and ISO 14001. The operational, monitoring and management procedures implemented on site are in accordance with the Veolia Management System and have been audited against the requirements of the standards detailed previously. A summary of the electronic live system is included with the application.

6. Summary of proposed permit changes

Summary of proposed change

Key permitting aspect	Changes proposed
Activities carried out on site	No change
Operational techniques	Management system changes include revised OMP in accordance with the latest guidance and format and new FPP.
Site drainage	No changes in infrastructure
Annual throughput	Increase from
Storage capacity	No increase - static pile sizes will be managed by the FPP.
Permit boundary	No change
Noise	No change in emissions
Odour	No change in emissions
Dust	No change in emissions