Ellington Road AD Facility

784-B042242

Odour Management Plan

Environmental Permit Variation Application

SUEZ Recycling and Recovery UK Ltd

November 2023

Document prepared on behalf of Tetra Tech Limited. Registered in England number: 01959704

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1.0 INTRODUCTION

1.1 REPORT CONTEXT

1.1.1 This Odour Management Plan (OMP) has been prepared by Tetra Tech on behalf of the operator, SUEZ Recycling and Recovery UK Ltd (SUEZ) in connection to their permitted facility at Ellington Road (the site), New Moor, Northumberland, NE63 9XS. The site location and permit boundary are presented on Drawing Number SUEZ/B042242/PER/01.

1.1.2 SUEZ currently hold a bespoke environmental permit (reference EPR/FP3934WZ) at the site which allows the operation of an In-Vessel Composting (IVC) facility and an Open Windrow Composting facility as Schedule 1 activities. It also allows the operation of a wood shredding facility and a street sweeping waste transfer station which are undertaken as waste operations.

1.1.3 SUEZ are now seeking to vary the environmental permit to remove the IVC facility and allow the operation of an Anaerobic Digestion (AD) facility that will process food waste from household waste collections as well as industrial and commercial customers. The proposed AD facility will be undertaken in the same area that was designated for the IVC facility. The process will generate biogas which then ultimately feeds into a biogas upgrading plant to National Gas Grid criteria and injected into the gas grid. The CHP engine which will have a capacity more than 1 megawatt thermal (MWth) and less than 50MWth. As such, it's considered that the CHP engine will be subject to the Medium Combustion Plant Directive (MCPD) and therefore will comprise a 1.2 MW MCP with a specified generator (SG).

1.1.4 There are no proposed changes with regards to the Open Windrow Composting, Wood shredding and street sweeping transfer station as a result of this application. As such, the risk of pests from these activities is not expected to increase. Subsequently, this OMP is solely based on the proposed AD facility.

1.1.5 All SUEZ operations are certified to ISO 14001, ISO 9001 and ISO 45001 and operate under documented management procedures. All SUEZ operations are controlled by an Integrated Management System (IMS) comprising quality, environmental and health and safety requirements.

1.2 OBJECTIVES OF THE ODOUR MANAGEMENT PLAN

1.2.1 This OMP is a working document, intended to be used as a reference document for operational staff on a day-to-day basis. SUEZ will implement the plan to ensure that all reasonable measures are taken to control odour emissions, and in the event that an adverse impact is caused, prompt action will be taken to identify the source and apply corrective measures. It provides a schedule of actions that will be taken to minimise odour impact and details site management procedures for the management and monitoring of odour.

1.2.2 This document has been prepared in accordance with Environment Agency's (EA) 'Odour Management Plan' template (Version 2, May 2021).

1.2.3 The OMP will adopt a Source → Pathway → Receptor model with an emphasis on implementing effective and robust controls for odour abatement at the earliest stages possible (i.e. at source). The guidance acknowledges that assessment and control of odour can be difficult due to dispersal and the episodic nature of odour events.

1.2.4 This document provides a summary of the physical and management controls that will be employed to minimise odour release. It provides a site-specific assessment of the potential sources of odour; the pathways odour can take from the site and the receptors it is likely to impact. The potential release points

of odour are identified and the management systems to prevent and control fugitive odour emissions. Monitoring and reporting systems are described in addition to emergency contingency plans.

2.0 SITE DESCRIPTION

2.1 SITE LOCATION

2.1.1 The AD facility will be located to the south west of the wider permitted facility at Ellington Road and is centred at approximate National Grid Reference (NGR) NZ 25761 89238.

2.1.2 The wider permitted facility is adjacent to an active landfill site which is operated by SUEZ under a separate environmental permit (reference EPR/DP3238SB) and includes the operation of landfill gas engines.

2.1.3 The surroundings of the site are predominantly agricultural land and the nearest sensitive receptor is a residential property (New Weetslade) which is located approximately 660m south east of the proposed AD facility.

2.2 OVERVIEW OF AD FACILITY

2.2.1 As noted in Section 1.1, SUEZ are seeking to operate an AD facility at the site which will take place in the same location that was originally designated for an IVC facility.

2.2.2 The AD facility would provide the treatment of organic food waste (initially from municipal waste streams only, although this is likely to be expanded to include some commercial food wastes as further facilities are developed). The process will generate biogas which then ultimately feeds into a biogas upgrading plant to National Gas Grid criteria and injected into the gas grid. Alternatively, the biogas may be processed by the CHP engine to generate heat and electricity that would be used by the AD plant.

2.2.3 It is considered that the AD facility will fall under following Schedule 1 activity of the Environmental Permitting (England and Wales) Regulations 2016 (as amended):-

- Section 5.4 A(1)(b)(i) - Recovery or a mix of recovery and disposal of non-hazardous waste with a capacity exceeding 75 tonnes per day (or 100 tonnes per day if the only waste treatment activity is anaerobic digestion) involving biological treatment.

2.2.4 In addition to the above, the AD facility will have the following Directly Associated Activities (DAAs):-

- Storage of waste pending recovery or disposal;
- Physical treatment for the purpose of recovery;
- Heat and electricity power supply (i.e. CHP)
- Emergency flare operation
- Gas upgrading
- Raw material storage
- Gas storage
- Digestate storage; and

2.2.5 Details of the process description are provided in Section 4 of this document.

2.3 MAITENANCE AND REVIEW OF OMP

2.3.1 The implementation and dissemination of this OMP will be the responsibility of the Site Manager, supported by other staff. The Site Manager can delegate certain tasks as required, although ultimate responsibility will remain with them.

2.3.2 A nominated deputy will be appointed for all times when the Site Manager is not on site. In such circumstances, it will be the nominated deputy's responsibility to ensure that the requirements of the OMP are adhered to.

2.3.3 The OMP is to be reviewed as a minimum on an annual frequency by the Site Manager and the Environment and Industrial Risk (EIR) Manager to ensure it reflects the latest guidance, legislation and the site operations.

2.3.4 Staff training will be a key aspect of ensuring that odour can be controlled through effective management during daily operations. All site operatives will therefore be trained via toolbox talks to deal with odour management issues. Annual refresher toolbox talks will ensure that the requirements of the OMP are reinforced.

2.4 RELEVANT SECTOR GUIDANCE

2.4.1 This OMP has been prepared with consideration to the following guidance documents:-

- Environment Agency - Environmental permitting: H4 odour management (April 2011);
- Environment Agency - Biological waste treatment: appropriate measures for permitted facilities (September 2022)
- European Commission's BAT Reference (BREF) Document for Waste Treatment (August 2018); and
- European Commission's BAT Conclusion for Waste Treatment (August 2018).

3.0 RECEPTORS

3.1 RECEPTOR LIST

3.1.1 The potential receptors within 1km of the AD facility have been identified in the table below and are presented on Drawing Number SUEZ/B042242/REC/01.

Table 1: Receptors Within 1km of the AD Facility

ID	Receptor	Direction from Operational Area	Minimum Distance from the Permit Application Boundary (approx. m)
Domestic Dwellings			
1	Portland Farm Cottage	N	955
2	Northumberland holiday lets cottage farmhouse	N	1,000
3	Residential Properties	SE	860
4	New Weetslade	SE	660
5	Property off A1068	NE	716
6	New Moor Shaft Cottages	NE	710
Commercial and Industrial Premises			
7	Portland Industrial Estate	SE	800
Schools/Hospitals/Shops/Amenities			
8	Bluesky Caravan Park	N	944
Highways or Minor Roads			
9	A1068	E	460
Protected Habitats			
10	Deciduous Woodland (Portland Burn)	N	489
11	Deciduous Woodland	S	885
12	Lowland Meadows	SE	576
Designated ecological habitats e.g. Ramsars, SAC, SPA, SSSI			
13	SSSI – Hawthorne Cottage Pasture	SE	585
Local Wildlife Sites (LWS)			
14	Portland Terrace Copse	S	880
Surface Water e.g. rivers and streams			
15	Portland Burn	E	60
Groundwater (sensitivity)			
According to the Multi-Agency Geographic Information for the Countryside's (MAGIC) website, the site is not situated within a groundwater source protection zone. The MAGIC website indicates that the site overlies a Secondary A aquifer.			

3.1.2 In addition to the above, Nature and Heritage Conservation Screen (Reference Number EPR/UP3494ZL/V007) was requested from the Environment Agency. This screen determines the presence of any sites of nature and heritage conservation, or protected species or habitats that may be impacted by the proposal. The results of the screen identified the following sites that are located over 1km of the site.

Table 2: Receptors Identified from Nature and Heritage Conservation Screen

Site	Designation	Direction from Operational Area	Minimum Distance from the Permit Application Boundary (approx. m)
Northumbria Coast	Special Protection Area (SPA)	E	5,780
Northumbria Coast	Ramsar	E	5,780
Northumberland Marine	Special Protection Area (SPA)	E	5,780

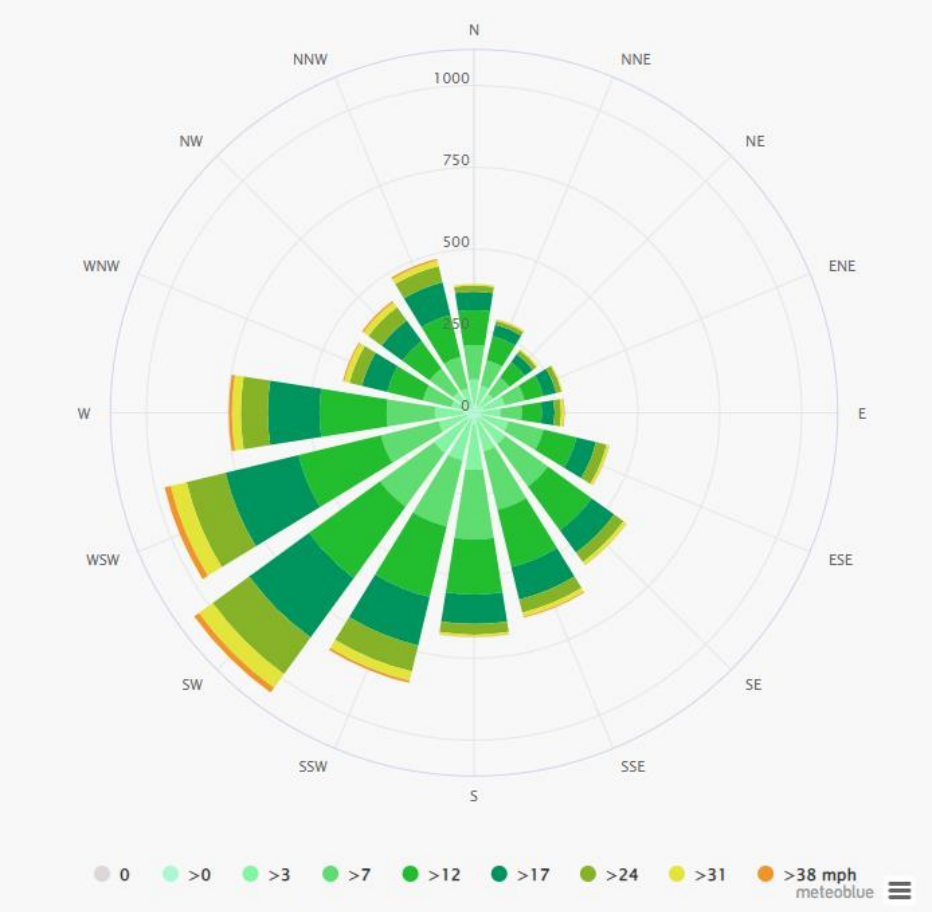
3.1.3 The receptors likely to be most sensitive to an odour nuisance arising from the site are domestic dwellings or commercial offices. As such, it's considered that receptors 1 to 8 in Table 1 may be the most sensitive to an odour nuisance.

3.2 METEREOLOGICAL DATA

3.2.1 The prevailing wind direction will determine which receptors will be affected and at what frequency.

3.2.2 Meteorological data has been used from Ashington from www.meteoblue.com which is considered to be representative of conditions within the vicinity of the application site. According to the wind rose data for the area, the prevailing winds in the local area is from the south west (SW) as shown in Figure 1 below.

Figure 1: Prevailing Wind Direction for Ashington



4.0 SOURCES OF ODOUR AND SITE PROCESSES

4.1 PROCESS DESCRIPTION

4.1.1 The AD facility can be separated into six general areas: reception, separation, anaerobic digestion, liquor treatment, biogas handling (including electricity generation) and odour control. An indicative site layout plan showing the proposed waste storage areas is provided on Drawing Number 1440_PL100.

Reception

4.1.2 Materials will be delivered to the site via road transport in Refuse Collection Vehicles (RCV) or tipping vehicles which will be covered to prevent fugitive emissions being released.

4.1.3 At present, vehicle movements at the site are currently restricted to a planning condition for the wider site to only accept a maximum of 150 vehicles on a daily basis.

4.1.4 Delivery vehicles would reverse into the reception area via a roller shutter door that is situated on the outside of the building and a speed door that is located inside the building. Once the doors are closed, the driver would deposit the waste into a waste pit that is situated within the reception area. The pit will be designed to push the waste into the pre-treatment area. This will ensure that waste is processed in the order it is received (first-in, first-out) and therefore ensure that the waste is not stored for more than 72 hours which will be the maximum residency time that waste will be stored in the reception area prior to treatment.

Separation

4.1.5 Waste will be fed into a de-packaging plant which is situated within the main AD process building. The plant will be designed to remove unwanted packaging and contamination (e.g. stones, glass, seeds, pips and bones). Any packaging and contaminants recovered from the plant will be discharged into skips/RoRos where they will be transferred to an appropriate permitted facility for further treatment. It's envisaged that up to 20 tonnes of packaging and contaminants will be stored on site prior to transfer and will be stored for no longer than 7 days.

4.1.6 The waste will also be diluted with recovered water from the process or towns water in order to achieve the required dry solids concentration to feed into the digestion process.

Anaerobic Digestion

4.1.7 The residual organic waste will be pumped into the hydrolysis buffer tank(s) located to the north of the main AD process building. The tank acts as a buffer between the intermittently working reception and processing halls and the continuously operating AD plant, as well as providing residence time for the enzymatic hydrolysis of fats and proteins.

4.1.8 Slurry is then pumped from the hydrolysis buffer tank to the anaerobic digesters. Three 7,800m^3 AD tanks would convert organic material to biogas (methane and carbon dioxide) by the fermentation of organic material in the absence of oxygen. The retention time of the digester is up to 60 days to maximise the biogas production and biogas is collected within the roof space, which is connected to the biogas system.

4.1.9 As part of the process, SUEZ intend to install pasteuriser tanks which may be used to heat the slurry to 70 °C before it is pumped into the aerobics digesters. Alternatively, the pasteuriser tanks may be incorporated at a later stage of the AD process where it will be used to heat the material 'digestate' to 70°C for a minimum 1 hour before being pumped into the post digestion buffer tank.

4.1.10 The material left from the process (digestate) will still be in slurry form and can be used as a fertiliser, compost or soil improver. To achieve this, the digestate will be subject to the specifications outlined in PAS

110 'Specification for whole digestate, separated liquor and separated fibre derived from the anaerobic digestion of source-segregated biodegradable materials.'

4.1.11 At this stage, SUEZ are considering the potential options to process the digestate. The main process is to process the digestate slurry through a centrifuge where solids are dewatered to a dry solid concentration of approximately 25%. The centrifuges will be located within the main AD process building.

4.1.12 Digested material falls by gravity into articulated trailers where it can be periodically collected and subsequently transferred off site. The trailers will have a total storage capacity of 50 tonnes. Under normal operating conditions, the maximum residence time for the digestate will be no longer than 24 hours before it is transferred off site.

4.1.13 The facility would provide approximately 10,000 tonnes of digested cake per annum which would be spread to agricultural land as a soil enhancer.

4.1.14 In the event that the digestate does not meet the required specifications, the material will be stored within designated RoRos/skips inside the AD building and disposed of accordingly.

Liquor Treatment

4.1.15 Liquor extracted during the dewatering process will be tankered offsite as a liquid fertiliser to reduce the Chemical Oxygen Demand, oxidise ammonia to nitrate and correct pH. Waste sludge from this process will be used to dilute the food waste entering the plant. The remaining liquid is clean enough to either be used for washing down or within the process. Excess liquid will be discharged to sewer.

4.1.16 Finally, SUEZ are considering the potential to utilise the digestate in a slurry form and therefore would not be processed by the centrifuge.

Biogas Handling

4.1.17 The biogas is captured from the AD tanks and is piped to a biogas upgrading plant to National Gas Grid criteria and injected into the gas grid. Alternatively, the biogas may be processed by the CHP engine to generate heat and electricity that would be used by the AD plant.

4.2 ODOUR CONTROL SYSTEM

4.2.1 Processes will be fully enclosed with an odour abatement system comprising the following:

- The first stage of the odour abatement system will consist of a biofilter fit with synthetic medium, this will be followed by reheat to reduce moisture and a second stage carbon filter in tipping hall and pre-treatment area; and
- Biogas scrubber to treat ammonia and hydrogen sulphide (H_2S) in the digestate out area.

4.3 OPERATING HOURS

4.3.1 The facility will operate 24 hours a day, in a similar manner to the current IVC but that vehicle movements to and from the site will be restricted to the following hours (which mirror the current planning permission for the IVC).

- 07:00 – 20:00 – Monday - Friday
- 07:00 – 17:00 – Saturday

4.3.2 There will be no deliveries undertaken on Sundays.

4.4 ODOROUS MATERIALS

4.4.1 The AD facility will solely treat food waste. A complete list of the proposed waste types is provided as Appendix A.

4.4.2 The waste acceptance limit for the AD facility will be no more than 100,000 tonnes per annum.

4.4.3 The following table provides an inventory of all potential odorous materials that may be accepted and generated as a result of the AD facility.

Table 3: Odourous Materials

Odorous and potentially odorous material (any solid, liquid or gas)	Odour potential High Risk / Medium Risk / Low Risk	Maximum quantity on site at any given day (tonnes per day or litres per day)	Maximum time held on site (hours or days)	Location of odorous materials on site
Food waste within waste reception area	High	450 tonnes	72 hours	Reception Hall (as shown on Drawing Number 1440_PL100)
Packaging and contaminants recovered from pre-treatment	Low	20 tonnes	7 days	Pre-Treatment Area (as shown on Drawing Number 1440_PL100)
Organic slurry in AD tanks	High	3 x 7,800m^3 tanks	60 days	Main AD processing area (as shown on Drawing Number 1440_PL100)
Digestate cake recovered from centrifuge	High	50 tonnes	2 weeks	Digestate storage area (as shown on Drawing Number 1440_PL100)
Biogas generated from the AD process	High	-	-	Biogas will be captured from the anaerobic digestion tanks and piped biogas upgrading plant to National Gas Grid criteria and injected into the gas grid. Alternatively, the biogas may be processed by the CHP engine to generate heat and electricity that would be used by the AD plant.

4.5 SOURCES OF ODOUR

4.5.1 The key aspects of the process which may lead to odour emissions are identified in Table 4 below and the control measures that will be used are detailed in Table 5.

Table 4: Source-Pathway-Receptor Routes From Waste Activities At The Site

Source	Pathway	Receptor	Type of impact

Receipt of organic waste in reception hall	Atmospheric dispersion	Receptors 1-8 listed in Table 1.	Odour annoyance
Mechanical treatment of waste as part of pre-treatment process	Atmospheric dispersion		Odour annoyance
Transfer of shredded material into waste dissolver	Atmospheric dispersion		Odour annoyance
Storage and treatment of waste in tanks	Atmospheric dispersion		Odour annoyance
Biogas production, storage and treatment	Atmospheric dispersion		Odour annoyance
Storage of waste outputs (digestate and liquor)	Atmospheric dispersion		Odour annoyance
Odour from odour system stack release point	Atmospheric dispersion		Odour annoyance

5.0 CONTROL MEASURES AND PROCESS MONITORING

5.1 APPROPRIATE MEASURES AND BAT

5.1.1 The following table details how appropriate measures and BAT (as specified in Section 2.4) will be applied for the AD facility.

Table 5: Monitoring procedures for appropriate measures/ BAT

Odorous and potentially odorous process / material	Control measures (Appropriate Measure / BAT)	Monitoring procedure and optimum process parameters	Trigger level	Action taken if outside optimum process parameters
Receipt of organic waste in reception hall	The whole AD process will be undertaken within the confines of a building. This building benefits from a roller shutter door on the outside and a speed door on the inside will be kept closed when not in use (i.e. arrival or departure of vehicles). In addition, pedestrian doors are also closed when not in direct use. This will minimise the potential for any odour generated on site to impact receptors beyond the site boundary. Waste will be deposited into the reception pit which benefits from a walking floor and screw conveyor that will push the waste into the pre-treatment area. This will ensure that waste is processed in the order it is received (first-in, first-out) and therefore ensure that the waste is not stored for more than 72 hours which will be the maximum residency time that waste will be stored in the reception area prior to treatment. The reception hall and pre-treatment area will benefit from an odour control system designed to extract and treat any odour emissions that may be generated from the AD process. Further details of the odour control system are provided in Section 4.2. The available storage capacity of the AD facility will be influenced by the period of time the waste is in the treatment vessels (60 days). Waste will only be accepted is there is sufficient capacity. All waste entering the site will be logged at the weighbridge including weight, EWC codes, date and time. The Site Manager will be able to	SUEZ's IMS includes site inspection check sheets that include a daily requirement to check the following:- • Condition of plant and equipment (including odour suppression system) • Condition of site infrastructure • Litter • Qualitatively assess odour The checklist will be completed by the Site Manager or designated staff and signed off at least weekly by the Technical Competent Manager (TCM) for the site.	Fault identified on plant, equipment or site infrastructure during daily checks. Waste identified on the reception hall floor (outside the reception pit)	If a fault is identified during the daily checks, remedial action will be instigated as soon as practicable. In the event of a mechanical breakdown that may result in an increased risk to odour emissions, the Site Manager (or a nominated delegate) will consider a reduction in waste deliveries or cease the acceptance of further waste until the required remedial action has been undertaken. In addition, the Site Manager (or a nominated delegate) may consider arrangements to transfer waste from the reception hall to a suitable permitted facility. If waste is identified outside the reception pit, site staff will undertake litter picking.

	review this information via weighbridge reports to understand the available storage capacity. Deliveries will be planned in advance with the delivery date agreed by SUEZ and the waste producer/holder. This will ensure that waste is accepted at managed volumes.			
Mechanical treatment of waste as part of pre-treatment process	The whole AD process will be undertaken within the confines of a building. This building benefits from a roller shutter door on the outside and a speed door on the inside will be kept closed when not in use (i.e. arrival or departure of vehicles). In addition, pedestrian doors are also closed when not in direct use. This will minimise the potential for any odour generated on site to impact receptors beyond the site boundary. Waste will be deposited into the reception pit which benefits from a walking floor and screw conveyor that will push the waste into the pre-treatment area. This will ensure that waste is processed in the order it is received (first-in, first-out) and therefore ensure that the waste is not stored for more than 72 hours which will be the maximum residency time that waste will be stored in the reception area prior to treatment. The reception hall and pre-treatment area will benefit from an odour control system designed to extract and treat any odour emissions that may be generated from the AD process. Further details of the odour control system are provided in Section 4.2. SUEZ's IMS includes policies and procedures that requires all plant to be maintained in accordance with the manufacturer's guidance. This will minimise the risk of mechanical failure that may result in increased odour emissions.	SUEZ's IMS includes site inspection check sheets that include a daily requirement to check the following:- • Condition of plant and equipment (including odour suppression system) • Condition of site infrastructure • Qualitatively assess odour The checklist will be completed by the Site Manager or designated staff and signed off at least weekly by the TCM for the site.	Fault identified plant, equipment or site infrastructure during daily checks.	If a fault is identified during the daily checks, remedial action will be instigated as soon as practicable. In the event of a mechanical breakdown that may result in an increased risk to odour emissions, the Site Manager (or a nominated delegate) will consider a reduction in waste deliveries or cease the acceptance of further waste until the required remedial action has been undertaken. In addition, the Site Manager (or a nominated delegate) may make arrangements to transfer waste pending treatment to a suitable permitted facility.
Transfer of shredded material into waste dissolver	The whole AD process will be undertaken within the confines of a building. This building benefits from a roller shutter door on the outside and a speed door on the inside will be kept closed when not in use (i.e. arrival or departure of vehicles). In addition, pedestrian doors are	SUEZ's IMS includes site inspection check sheets that include a daily requirement to check the following:-	Fault identified plant, equipment or site infrastructure during daily checks.	If a fault is identified during the daily checks or the process control system, remedial action will be instigated as soon as practicable.

	also closed when not in direct use. This will minimise the potential for any odour generated on site to impact receptors beyond the site boundary. Following the pre-treatment process, shredded organic waste material will be conveyed from the pre-treatment area to the waste dissolver. This process will be supervised by a competent member of staff. The conveyor will be covered and situated within the confines of the building. The reception hall and pre-treatment area will benefit from an odour control system designed to extract and treat any odour emissions that may be generated from the AD process. Further details of the odour control system are provided in Section 4.2. The AD plant will benefit from a process monitoring control system which will monitor the operational parameters of the plant including the available storage capacity of the vessels. This system will be used to facilitate effective stock management and minimise the risk of vessels overfilling.	• Condition of plant and equipment (including odour suppression system) • Condition of site infrastructure • Litter • Qualitatively assess odour The checklist will be completed by the Site Manager or designated staff and signed off at least weekly by the TCM. In addition, the operational parameters of the AD plant will be monitored continuously via the process control system.	Fault is identified via the process control system.	In the event of a mechanical breakdown that may result in an increased risk to odour emissions, the Site Manager (or a nominated delegate) will consider a reduction in waste deliveries or cease the acceptance of further waste until the required remedial action has been undertaken. In addition, the Site Manager (or a nominated delegate) may make arrangements to transfer waste in the reception hall to an alternate facility. If waste is identified during the transfer of material from the pre-treatment area to the waste dissolver, site staff will undertake litter picking.
Storage and treatment of waste in tanks	The whole AD process will be undertaken within the confines of a building. This building benefits from a roller shutter door on the outside and a speed door on the inside will be kept closed when not in use (i.e. arrival or departure of vehicles). In addition, pedestrian doors are also closed when not in direct use. This will minimise the potential for any odour generated on site to impact receptors beyond the site boundary. The main AD process will be undertaken within a sealed system that has been designed in line with the CIRIA 'Containment systems for the prevention of pollution (C736)' document.	SUEZ's IMS includes site inspection check sheets that include a daily requirement to check the following:- • Condition of plant and equipment (including odour suppression system) • Condition of site infrastructure • Qualitatively assess odour	Fault identified plant, equipment or site infrastructure during daily checks. Fault is identified via the process control system.	If a fault is identified during the daily checks or the process control system, remedial action will be instigated as soon as practicable. In the event of a mechanical breakdown that may result in an increased risk to odour emissions, the Site Manager (or a nominated delegate) will consider a reduction in waste deliveries or cease the acceptance of further waste until the required remedial action has been undertaken. In addition, the Site Manager (or a nominated delegate) may make arrangements to discharge the slurry into a tanker and transfer to a suitable permitted facility.

	The AD plant will benefit from a process monitoring control system which will monitor the operational parameters of the plant including the available storage capacity of the vessels. This system will be used to facilitate effective stock management and minimise the risk of vessels overfilling. The system will also be designed to identify system failures that may lead to increased odour emissions (e.g. leaks in pipework or containment). SUEZ's IMS includes policies and procedures that requires all plant to be maintained in accordance with the manufacturer's guidance. This will minimise the risk of mechanical failure that may result in increased odour emissions.	The checklist will be completed by the Site Manager or designated staff and signed off at least weekly by the TCM. In addition, the operational parameters of the AD plant will be monitored continuously via the process control system.		
Biogas production, storage and treatment	Biogas from the AD process will be captured from the AD tanks and piped to the biogas upgrading plant to National Gas Grid criteria and injected into the gas grid. Alternatively, the biogas may be processed by the CHP engine to generate heat and electricity that would be used by the AD plant. The gas collection system will comprise a leak detection programme which will identify any methane slippages and therefore allow remedial action to be undertaken as soon as practicable. The AD facility will benefit from a gas flare which will be used to process excess biogas.	SUEZ's IMS includes site inspection check sheets that include a daily requirement to check the following:- • Condition of plant and equipment (including odour suppression system) • Condition of site infrastructure • Qualitatively assess odour The checklist will be completed by the Site Manager or designated staff and signed off at least weekly by the TCM.. In addition, the operational parameters of the AD plant will	Fault identified plant, equipment or site infrastructure during daily checks. Fault is identified via the process control system.	If a fault is identified during the daily checks or the process control system, remedial action will be instigated as soon as practicable.

		be monitored continuously via the process control system.		
Storage of outputs (digestate and liquor)	The whole AD process will be undertaken within the confines of a building. This building benefits from a roller shutter door on the outside and a speed door on the inside will be kept closed when not in use (i.e. arrival or departure of vehicles). In addition, pedestrian doors are also closed when not in direct use. This will minimise the potential for any odour generated on site to impact receptors beyond the site boundary. Digestate produced by the AD process will be discharged into articulated trailers where it can be periodically collected and subsequently transferred off site. The trailers will be situated within a designated area inside the AD building. The storage area will be connected to an odour control system to process any odour that may be generated from the digestate. Any liquor will be pumped and stored in a designated tank that has been designed in line with the CIRIA 'Containment systems for the prevention of pollution (C736)' document. The liquor storage tank will be fitted with an alarm to warn the potential of overfilling.	SUEZ's IMS includes site inspection check sheets that include a daily requirement to check the following:- • Condition of plant and equipment (including odour suppression system) • Condition of site infrastructure • Qualitatively assess odour The checklist will be completed by the Site Manager or designated staff and signed off at least weekly by the TCM.	Fault identified plant, equipment or site infrastructure during daily checks. Fault is identified via the process control system.	If a fault is identified during the daily checks or the process control system, remedial action will be instigated as soon as practicable.

6.0 ODOUR REPORTING

6.1 COMPLAINTS REPORTING

Investigation and Records

6.1.1 Any complaints received at the facility or via the regulatory bodies including the Environment Agency and Local Authority, will be recorded and SUEZ will instigate further olfactory monitoring at the location of the complaint and on site to determine the extent and location of the odour and the odour causing materials. Where possible, as much information and detail about the complaint will be recorded, whether this is from the relevant authority or complaint direct to site. This information will assist in the investigation and determining the source of the odour.

6.1.2 All complaints and queries will be logged in accordance with the integrated management system as soon as in practicably possible. All complaints logged will be subject to investigation and complainants responded to within 48 hours of receipt. All responses will be through trained and experienced staff.

6.1.3 Complaints investigations are carried out by site management that are not regularly exposed to the odours and therefore are able to assess the level of odour objectively.

6.1.4 Should the complaint be received out of operational hours then site management shall try to attend site as soon as possible to carry out an investigation dependent upon availability.

6.1.5 The Environment Agency shall be informed of all findings from the investigations so they can relay this back to the complainants where necessary.

6.1.6 Should a complaint be made direct to the site then site management shall carry out a detailed odour assessment as detailed below.

6.1.7 SUEZ will ensure that the complainant has all the relevant contact details of the site (i.e. the Site Manager) and the officer responsible at the Environment Agency. SUEZ will be in regular contact with the complainant and the Agency whilst the cause of the odour is being investigated and remediated.

6.1.8 An evaluation of the effectiveness of the techniques used will be carried out on completion of any remedial measures or if the complaints persist. Records of the above will be retained by site for future reference.

Non-Conformances and Complaints

6.1.9 Corrective action procedures are documented in Section 2.13 of the IMS – Non-conformance, Corrective and Preventive Actions. A list of all policies and procedures is included in the Site Management Plan, which forms part of the Environmental Permit.

6.1.10 Each complaint will be reviewed and assessed. If the site is identified as the source of the potential odour nuisance then an assessment shall be carried out in order to determine the source of the complaint and then the cause of the odour.

6.1.11 If an odour can be directly related to the site, corrective actions will be identified and programmed for remediation. Actions taken in response to any odour complaint will be recorded on the odour investigation form.

6.1.12 If remediation cannot be completed within 24 hours then the non-conformance and remedial actions shall be raised on the SUEZ Compliance and Audit System (COMPAS).

Odour Complaints and Management Review

6.1.13 All complaints will be investigated immediately by the site management and the EIR Manager including but not limited to a review of the number of complaints, weather conditions, investigations and remediation works. If required, the Site Management Plan and OMP shall be updated to reflect any changes made to the management procedures on site following the review.

6.1.14 Site management and the EIR Manager will review all procedures for the facility against other SUEZ operations and management procedures as well as industry practice, guidance and legislation to ensure continued best practice is carried out at the facility. Any amendments to practices on site will be reflected in updates of the Site Management and OMP.

6.1.15 All odour complaints are reported to the EIR Department via the EIR Manager and where applicable communicated to relevant parties within SUEZ as part of the EIR Department's monthly review.

6.2 COMMUNITY ENGAGEMENT

6.2.1 Should odours be identified from external sources which are thought may have been related to complaints received or likely to cause complaints then the site would consider contacting those responsible for the odour if possible, to establish communication in relation to those activities.

6.2.2 Should extensive work be required on site which may lead to potential odour complaint then the site may consider providing advance warning to residents, dependent upon the likely duration and estimated impact of such works. The Environment Agency would be contacted prior to issuing any such notice.

6.2.3 Due to the absence of odour complaints to the facility it is not thought that ongoing community engagement is required however this would be reviewed in light of any complaint received at the facility.

6.3 MONITORING

Qualitative Monitoring

6.3.1 Odour is continually assessed by all staff present on Site and any odours identified are reported to site management for investigation.

6.3.2 Odour Monitoring is carried out using sniff testing to check ambient air on or off Site.

6.3.3 Those doing the assessment will try to avoid where possible strong food or drinks, including coffee, for at least half an hour beforehand and strong scented toiletries and deodorisers in any vehicle used during the assessment.

6.3.4 All odour assessments are undertaken using the intensity scale detailed below which is in line with the H4 Odour Management Guidance. This ensures consistency and enables odour assessments taken by Site Management to be compared with odour assessments taken in conjunction with or independently by the Environment Agency.

- 0. None
- 1. Very Faint
- 2. Faint
- 3. Distinct
- 4. Strong
- 5. Very Strong
- 6. Extremely Strong

6.3.5 The odour extent, sensitivity and offensiveness are also recorded using the scales as set out on the Operative Odour Assessment and the Detailed Odour Investigation Forms.

6.3.6 A weather station is located at the weighbridge of the facility and is used to record meteorological conditions to aid in assistance with any odour assessments and investigations.

Odour Checks

6.3.7 Odour assessments are undertaken routinely throughout the operations of the site by all site staff.

6.3.8 Specific odour checks are undertaken on a twice daily basis and recorded on the QEMS daily inspection checklist (Appendix B).

6.3.9 Any odours identified must be clearly marked on the QEMS daily inspection checklist.

6.3.10 Should an odour be detected at the boundary of the site during routine daily odour inspections then additional checks shall be carried out external to the AD facility but within the wider Ellington Facility boundary and recorded on the operative odour assessment form (Appendix C).

6.3.11 Should an odour be recorded at the boundary of the site, during the operative odour assessment then an odour investigation shall be carried out external to the wider Ellington Facility and recorded on the detailed odour investigation form (Appendix C).

6.3.12 Upon identification of an incident or failure of a control measure then the monitoring frequency shall be amended as identified within the contingency measures detailed in Section 7.0.

Quantitative Monitoring

6.3.13 As noted in Section 4.2, the AD facility will benefit from an odour control system that will comprise emission points to air and will include open biofilters and an emission stack. The location of these emission points are shown on Drawing Number SUEZ/B042442/AQA/01.

6.3.14 The open biofilters will be monitored for odour concentration on a bi-annual basis in accordance with the BS EN 13725 standard. The results of monitoring will be recorded and may be referred to during an odour investigation or complaint.

7.0 ABNORMAL EVENTS AND CONTINGENCY PLANS

7.1 CONTINGENCY AND EMERGENCY PLANS

7.1.1 The OMP assumes that the site will be running under expected operational conditions. There are however a number of circumstances which could result in an odorous emission from the site if not appropriately considered in advance.

Table 6: Contingency and Emergency Plans

Issue	Potential Impact on Site Operations	Contingency Measures
Planned plant maintenance/shut down	This could potentially mean the site does not have capacity to transfer/treat wastes.	The operational procedures for shut downs will then be implemented. The site will act as a transfer station for bulking of waste and treatment at other permitted facilities off site.
Unplanned plant maintenance/ shut down	This could potentially mean the site does not have capacity to transfer/treat wastes.	See above
Receipt of particularly odorous wastes	This could potentially mean that the storage of waste causes unacceptable odour impact.	The Site Manager or appropriately appointed person will assess the load and make a decision on whether or not the load in question should be accepted. If the load is rejected, SUEZ's load rejection procedure will be followed. Waste streams that are consistently very odorous will be stopped from entering the site.
Weather (or other factors) limiting removal of waste	Poor weather could lead to transport issues, causing waste to accumulate on site.	Alternative disposal or recovery points within the UK will be explored (with landfill as the final option). Waste inputs will be minimised or stopped so that the site remains compliant with the maximum storage capacities and timescales.
Factors limiting removal of other potentially odorous waste streams	Difficulties in removing these waste streams could lead to waste accumulating on site.	Alternative disposal or recovery points within the UK will be explored (with landfill as the final option). Waste inputs will be minimised or stopped so that the site remains compliant with the maximum storage capacities and timescales.
Failure of control infrastructure	Failure in control infrastructure could lead to inadequate containment of waste.	A Corrective Action Request will be raised. Contractors will be appointed to repair the damage as soon as possible. Site operations will continue, but they will be monitored carefully to ensure that emissions are managed.

Experience with Contingency/Emergency Situations

7.1.2 SUEZ is experienced in developing contingency plans for other long-term contracts which have worked effectively on previous occasions.

7.1.3 SUEZ has a policy of continuous review of emergency and contingency procedures and this has allowed experience from these incidents to be used to improve procedures across the operations.

7.1.4 SUEZ experience in operating a significant number of waste facilities, together with managing complex long-term contracts offering similar services, means that SUEZ is able to offer the benefit of experience in and knowledge of logistical planning to ensure that service continues effectively with minimal disruption.

Review and Update of Contingency and Emergency Plans

7.1.5 The Contingency Plan and Emergency Plan will be reviewed following any incident where they have had to be followed. They will be updated as necessary incorporating the outcome of any lessons learned.

DRAWINGS

Site Location - SUEZ/B042242/PER/01

Receptor Plan - SUEZ/B042242/REC/01

Proposed Site Layout – 1440_PL100

APPENDICIES

APPENDIX A - WASTE TYPES

Table A1: Waste Types for Anaerobic Digestion Plant

Waste Code	Description
02	**Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing.**
02 01	**Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing**
02 01 01	Sludges from washing and cleaning – vegetables, fruit and other crops
02 01 02	Animal tissue waste
02 01 03	Plant tissue waste
02 01 06	Animal faeces, urine and manure (including spoiled straw) only
02 01 07	Wastes from forestry
02 01 99	Wastes not otherwise specified – spent mushroom compost from commercial mushroom growing only
02 02	**Wastes from the preparation and processing of meat, fish and other foods of animal origin**
02 02 01	Sludges from washing and cleaning
02 02 02	Animal tissue waste
02 02 03	Materials unsuitable for consumption or processing
02 02 04	Sludges from on-site effluent treatment
02 02 99	Sludges from gelatine production and animal gut contents only
02 03	**Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee, tea and tobacco preparation and processing; conserve production; yeast and yeast extract production, molasses preparation and fermentation**
02 03 01	Sludges from washing, cleaning peeling, centrifuging and separation (including sludge from production of edible fats and oils, seasoning residues, molasses residues, residues from production of potato, corn or rice starch only)
02 03 04	Materials unsuitable for consumption or processing
02 03 05	Sludges from on-site effluent treatment
02 04	**Wastes from sugar processing**
02 04 01	Soils from washing and cleaning beet
02 04 03	Sludges from on-site effluent treatment
02 04 99	Other biodegradable wastes, allowed only if no chemical agents added and no toxin residues
02 05	**Wastes from the dairy products industry**
02 05 01	Wastes from the dairy products industry
02 05 02	Sludges from on-site effluent treatment
02 06	**Wastes from the baking and confectionery industry**
02 06 01	Materials unsuitable for consumption or processing
02 06 03	Sludges from on-site effluent treatment

02 07	**Wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)**
02 07 01	Wastes from washing, cleaning and mechanical reduction of raw materials
02 07 02	Wastes from spirits distillation
02 07 04	Materials unsuitable for consumption or processing
02 07 05	Sludges from on-site effluent treatment – sludges from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)
02 07 99	• Malt husks, malt sprouts, malt dust • Spent and sludge from breweries • Sludge from wine making Waste types in this section allowed if biodegradable material only, no chemical agents added
04	**WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES**
04 02	**Waste from the textile industry**
04 02 10	Organic matter from natural products such as grease and wax
07	**WASTE FROM ORGANIC CHEMICAL PROCESSES**
07 01	**Wastes from the manufacture, formulation, supply and use of basic organic chemicals**
07 01 08	Glycerol waste from bio-diesel manufacture from non-waste vegetable oils
15	**WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
15 01	**Waste packaging, absorbents, filter materials, wiping cloths and protective clothing**
15 01 01	Paper and cardboard packaging (excluding veneers, plastic coatings or laminates) certified to EN 13432 or equivalent certified compostable standard
15 01 02	Plastic packaging – compostable plastics only certified to EN 13432 or equivalent certified compostable or digestible standard
15 01 03	Wooden packaging – virgin timber only
15 01 05	Composite packaging meeting EN 13432 or equivalent certified compostable or digestible standard
15 02	**Absorbents, filter materials, wiping cloths and protective clothing**
15 02 03	Absorbents, filter materials and cloths from the production of alcoholic and non-alcoholic beverages other than those mentioned in 15 02 02 made from compostable material only
16	**WASTES NOT OTHERWISE SPECIFIED IN THE LIST**
16 10	**Aqueous liquid waste destined for off-site treatment**
16 10 02	Untreated wash waters from cleaning fruit and vegetables on farm only
16 10 02	Milk and dairy waste milk from agricultural premises only
16 10 02	Liquor or leachate from a composting process that accepts waste input types listed in these standard rules or composting and anaerobic digestion standard rules only and in compliance with Animal By Products Regulations
19	**Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use**

19 02	**Wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation**
19 02 03	Premixed wastes composed from waste listed within these standard rules only
19 02 06	Sludge types from waste listed within this table that have been heat treated only
19 02 06	Sludges from physico/chemical treatment other than those mentioned in 19 02 05 (sewage sludge which has been previously pasteurised and stabilised only)
19 02 10	Glycerol not designated as hazardous – excludes 19 02 08
19 05	**Wastes from anaerobic treatment of solid wastes**
19 05 99	Waste types in this section are allowed only if derived from input types allowed by the Anaerobic Digestate Quality Protocol
19 06	**Wastes from anaerobic treatment of waste**
19 06 03	Liquor from anaerobic treatment of municipal waste (from a process that treats wastes which are listed in this table only)
19 06 04	Digestate from anaerobic treatment of source segregated biodegradable waste (from a process that treats wastes which are listed in this table only)
19 06 05	Liquor from anaerobic treatment of animal and vegetable waste (from a process that treats wastes which are listed in this table only)
19 06 06	Digestate from anaerobic treatment of animal and vegetable waste (from a process that treats wastes which are listed in this table only)
19 08	**Wastes from wastewater treatment works**
19 08 09	Grease and oil mixture from oil and water separation containing only edible oils and fats
19 08 12	Sludges from biological treatment of industrial waste water (from a process that treats wastes which are listed in these standard rules only)
19 12	**Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 12	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
20	**Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions**
20 01	**separately collected fractions (except 15 01)**
20 01 01	Paper and cardboard (excluding veneers, plastic coatings or laminates) meeting EN 13432 or equivalent certified compostable or digestible packaging only
20 01 08	Biodegradable kitchen and canteen waste
20 01 25	Edible oil and fat
20 02	**Garden and park wastes (including cemetery waste)**
20 02 01	Biodegradable waste
20 03	**Other municipal wastes**
20 03 01	Mixed municipal waste
20 03 02	Waste from markets

APPENDIX B - ODOUR INSPECTION FORM

APPENDIX C - INDICATIVE DAILY/WEEKLY INSPECTION CHECKLIST