

Ellington Road AD Facility

784-B042442

Environmental Risk Assessment

Environmental Permit Variation Application

SUEZ Recycling and Recovery UK Ltd

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1.0 INTRODUCTION

1.1 REPORT SCOPE

- 1.1.1 This section of the Environmental Permit application corresponds to Section 6 of Part C2 of the Environmental Permit application forms, and has been prepared on behalf of the operator, SUEZ Recycling and Recovery UK Ltd (SUEZ).
- 1.1.2 This document relates to SUEZ's permitted facility at Ellington Road (the site), New Moor, Northumberland NE63 9XS.
- 1.1.3 This Environmental Risk Assessment (ERA) has been prepared to support an Environmental Permit Application to vary the environmental permit (EPR/FP3934WZ) to remove the In-Vessel Composting (IVC) facility and allow the operation of an Anaerobic Digestion (AD) 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. Alternatively, the biogas may be processed by a Combined Heat and Power (CHP) engine to generate heat and electricity that would be used by the AD plant. The CHP engine 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 This ERA is limited to a qualitative assessment of the potential risks to the environment and human health specifically related to the proposed activity. This report will identify any significant risk and demonstrate that the risk of pollution will be acceptable by taking the appropriate measures to manage the risk.

2.0 ENVIRONMENTAL RISK ASSESSMENT

2.1 METHODOLOGY

- 2.1.1 This report has been prepared following the Environment Agency's (EA) Risk Assessment guidance. It specifically relates to the potential risks associated with the following risk types: -
- Amenity and Accidents;
 - Surface water discharges;
 - Air;
 - Global Warming potential;
 - Site Waste; and
 - Groundwater
- 2.1.2 There will be no direct emissions to groundwater or surface water as a result of this proposal. Subsequently, it's considered that no further assessment is required for groundwater.
- 2.1.3 This report addresses the risks associated with amenity and accidents, air, global warming potential and site waste.
- 2.1.4 This risk assessment addresses the above, and is based on the following methodology: -
- Identification of potential sources of risks;
 - Identification of all potential receptors to risk; and
 - Risk assessment of each risk type.
- 2.1.5 The ERA is a tool used to identify the pollutant linkage i.e., source-pathway-receptor. For most risks, the atmosphere is the main pathway and will always exist. Therefore, the ERA deals primarily with the sources and receptors and is provided in Appendix A and summarised below.

2.2 SOURCES

- 2.2.1 The potential sources of risks have been considered for each risk type, as provided in Appendix A and summarised below:

Odour

- Receipt and treatment of organic waste;
- Biogas generated from the AD process;
- Storage of waste outputs from the AD process;
- Odour from the storage of waste during contingencies (e.g. mechanical breakdown)

Noise and Vibration

- Engine noise from vehicle movements;
- Use of reverse vehicle warnings;
- Loading/unloading of waste;

- Physical treatment of waste as part of the pre-treatment process;

Fugitive Emissions

- Particulate matter i.e., dust;
- Bioaerosols;
- Scavenging birds;
- Contaminated surface water run-off;
- Mud; and
- Litter.

Accidents

- Fire or failure to contain firewater;
- Plant failure or breakdown;
- Flooding; and
- Vandalism

2.3 PATHWAYS

Table 1 : Potential Pathways

Risk Type	Pathway
Odour	Atmosphere
Noise and vibration	Atmosphere
Fugitive emissions	Atmosphere
Accidents	Atmosphere
	Surface water run-off
	Infiltration
	Percolation

2.4 RECEPTORS

- 2.4.1 Receptors within 1km of the proposed application boundary, including those identified in the Nature and Heritage Conservation Screen (Appendix B), have been listed in Table 3 and are shown on Drawing Number SUEZ/B042442/REC/01.
- 2.4.2 Receptors that are over 1km of the site and were identified in the Nature and Heritage Conservation Screen are identified in the maps that were provided in the Nature and Heritage Conservation Screen report (Appendix B).
- 2.4.3 The main pathway for the identified sources will be atmosphere and as such, atmospheric conditions can affect dispersion rates and hence potential risk. As a result, the location of each receptor in relation to the site may influence the potential impact of the risk, as summarised in Table 3.

Table 2: 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	715
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	W	60
16	Pond	E	160
17	Pond	E	235
18	Series of ponds	SW	360
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. In addition, the MAGIC website indicates that the site overlies a Secondary A aquifer.

- 2.4.4 A 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.

2.4.5 The results of the screen (Appendix B) identified the following sites are located over 1km of the site.

Table 3: 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

2.5 RISK ASSESSMENT

2.5.1 The ERA (Appendix A) looks at each specific hazard identified and assesses the likelihood of those hazards impacting on the receptors. This is achieved by fulfilling the following objectives: -

- Identify the location and nature of each hazard;
- Identify the specific receptors potentially at risk and assess the sensitivity of each receptor;
- Provide a qualitative assessment of the risk posed to each sensitive receptor;
- Identify management and monitoring techniques; and
- Provide recommendations for more detailed assessments where necessary.

2.6 SUMMARY OF ERA

2.6.1 The ERA (Appendix A) indicates that the proposed development will have no significant impact with regards to odour, noise and fugitive emissions, and the likelihood of accidents is minimal.

3.0 AIR QUALITY RISK ASSESSMENT

3.1 METHODOLOGY

- 3.1.1 The EA's guidance requires the identification of any substances released to the air, the quantification of the emissions, and an evaluation of the potential environmental impact of the emissions.
- 3.1.2 The operation of the proposed AD facility will comprise emission points to air. Subsequently, an Air Quality Assessment (AQA) has been undertaken to assess the potential impact on air quality associated with the proposal. A copy of the AQA is provided as Appendix E of the Environmental Permit Application.

4.0 SITE WASTE

4.1 METHODOLOGY

- 4.1.1 The recommended approach for a site waste assessment is detailed in the EA’s ‘Select a Waste Recovery or Disposal Method for your Environmental Permit’ guidance.
- 4.1.2 As detailed in the Best Available Techniques and Operating Techniques (BATOT) document (Appendix C of the Environmental Permit Application), there will be three outputs associated with the proposed AD facility.
- 4.1.3 The first output will comprise unwanted packaging and contaminants which are removed from the food waste as part of the pre-treatment process. This waste will be stored within a skip and bulked up within the pre-treatment area prior to transfer off site to an appropriate permitted facility for further treatment.
- 4.1.4 The second output will be the biogas which will feed into 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. According to the guidance provided in the Quality Protocol ‘Biomethane from Waste’, it’s considered that the biogas will be fully recovered and therefore ceases to be waste for each end use
- 4.1.5 The third output relates to the digestate that’s generated from the main AD process. As mentioned in Sections 4.4 and 4.5 of the BATOT, SUEZ are seeking to utilise the digestate in a slurry, solid and liquid form which 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. If the digestate complies with PAS 110, it’s considered that the digestate meets the end of waste criteria.
- 4.1.6 In the event that the digestate does not meet the specifications of PAS 110, it’s considered that the digestate is waste and therefore will need to be disposed of accordingly.
- 4.1.7 In light of the above, it’s considered that the proposed AD facility will generate the following waste outputs:-
- Unwanted packaging and contaminants
 - Non-compliant/poor quality digestate
 - Waste effluent
- 4.1.8 The following tables identify 3 scenarios for the destination of the waste which is produced from the AD facility.
- 4.1.9 Option 1 details a scenario whereby the packaging and contaminants are transferred off site for recovery, non-compliant digestate is and the digestate, liquor and slurry are used for land spreading as a soil enhancer.
- 4.1.10 Option 2 details a scenario whereby the packaging and contaminants are transferred off site for recovery, the digestate and slurry are used for land spreading and the liquor is discharged to sewer.
- 4.1.11 Option 3 represents a scenario whereby all materials are transferred off site for disposal by landfill.

Table 4: Waste Assessment - Option 1

Description of Waste Stream	Amount Produced (tonnes/annum)	Nature of Waste	Disposal or Recovery Option	Impact Score
Unwanted packaging/contaminants	2,500	Non-hazardous (2)	Recycling – R4 and R5 (3)	15,000

Digestate cake	20,000	Biodegradable Non-hazardous (4)	Land spreading – R10 (4)	320,000
Liquor	50,000	Biodegradable Non-hazardous (4)	Land spreading – R10 (4)	800,000

Table 5: Waste Assessment - Option 2

Description of Waste Stream	Amount Produced (tonnes/annum)	Nature of Waste	Disposal or Recovery Option	Impact Score
Unwanted packaging/contaminants	2,500	Non-hazardous (2)	Recycling – R4 and R5 (3)	15,000
Digestate cake	20,000	Biodegradable Non-hazardous (4)	Land spreading – R10 (4)	320,000
Liquor	50,000	Biodegradable Non-hazardous (4)	Biological and/or physical and chemical treatment – D8/D9 (12)	2,400,000

Table 6: Waste Assessment - Option 3

Description of Waste Stream	Amount Produced (tonnes/annum)	Nature of Waste	Disposal or Recovery Option	Impact Score
Unwanted packaging/contaminants	2,500	Non-hazardous (2)	Landfill – D1 (30)	150,000
Digestate cake	20,000	Biodegradable Non-hazardous (4)	Landfill – D1 (30)	2,400,000
Liquor	50,000	Biodegradable Non-hazardous (4)	Landfill – D1 (30)	6,000,000

- 4.1.12 The tables above indicates that the scenario outlined in Option 1 represents the lowest impact scores that may be achieved for the waste outputs. As noted above, Option 1 provides a similar scenario to Option 2. The only difference is the disposal/recovery route for the liquor that is recovered from the digestate.
- 4.1.13 Consideration will be given to seeking alternative treatment and disposal routes in the future where new technologies are brought online.

5.0 GLOBAL WARMING POTENTIAL

- 5.1 According to the EA's with the "Assess the impact of air emissions on global warming" guidance, an assessment must be undertaken to determine the impact of any air emissions towards global warming. As noted in Section 3, the proposed AD facility will comprise emission points to air which relate to the operation of the one CHP engine.
- 5.2 The purpose of the CHP engine is to process biogas from the AD process to generate heat and electricity that would be used to accommodate the parasitic load of the AD plant.
- 5.3 According to the aforementioned guidance, any direct or indirect carbon dioxide emissions that come from renewable energy sources (e.g. from waste or from 'biomass' - biodegraded waste) are considered as having an impact of '0' on global warming.
- 5.4 As such, it's considered that the air emissions from the CHP engine will not have an impact on global warming and therefore further assessment is not required.
- 5.5 Due to the site being classified as having an impact of '0' on global warming, it is established that a Greenhouse Gas Assessment is not required for this report.

DRAWINGS

Receptor Plan - SUEZ/B042242/REC/01

APPENDICES

APPENDIX A – ENVIRONMENTAL RISK ASSESSMENT

Table A1 - Odour Risk Assessment and Management Plan

What do you do that can harm and what could be harmed?			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Receipt and treatment of odorous wastes	Occupiers of domestic dwellings listed in Table 2 above. Commercial and industrial units' users in listed Table 2 above. Amenities listed in Table 2 above.	Atmosphere	All odorous waste will be unloaded and processed from within an enclosed 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 building will also benefit from an odour control system which will be designed to extract and treat any odour emissions that may be generated from the AD process. Details regarding the odour control system are provided in the Odour Management Plan (Appendix F of the Environmental Permit Application). All waste delivered for the AD process will be deposited within a waste reception pit that is situated within the waste 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	Low – the management procedures should prevent emissions of odour.	Medium/Low - Odour annoyance	Low – The management procedures employed reduce the likelihood of impact

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			<p>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.</p> <p>Although the retention time for the main AD process will be up to 60 days, the process will be undertaken within sealed tanks which will minimise the release of odour emissions.</p> <p>SUEZ's Integrated Management System (IMS) includes site inspection check sheets that include a daily requirement for site staff to qualitatively assess odour; if perceived to be excessive, measures will be taken to identify the source of any malodorous and take appropriate remedial action.</p> <p>In addition to the above, SUEZ's IMS includes policies and procedures that requires all site infrastructure to be maintained in accordance with the manufacturer's guidance. In addition, the IMS includes a daily requirement for site staff to check plant and site infrastructure to ensure continuing integrity and fitness for purpose. In the event that any defects are identified so that it no longer meets the required standards, necessary remedial work will be completed as soon as practicable.</p> <p>In addition to the above, an Odour Management Plan (OMP) has been prepared which details how odour from the proposed activities will be managed. A copy of the OMP is provided as Appendix F of the Environmental Permit Application.</p>			
Odour from biogas	Occupiers of domestic	Atmosphere	The whole AD process will be undertaken within an enclosed building. This building benefits from a roller shutter door on the outside and a speed	Low – the management	Medium/Low - Odour	Low – The management procedures employed

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<p>generated from AD process</p>	<p>dwellings listed in Table 2 above.</p> <p>Commercial and industrial units' users in listed Table 2 above.</p> <p>Amenities listed in Table 2 above.</p>		<p>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.</p> <p>Any gases that are produced from the AD process will be produced within a sealed network and will be 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.</p> <p>SUEZ's IMS includes site inspection check sheets that include a daily requirement for site staff to qualitatively assess odour; if perceived to be excessive, measures will be taken to identify the source of any malodorous and take appropriate remedial action.</p> <p>In addition to the above, SUEZ's IMS includes policies and procedures that requires all site infrastructure to be maintained in accordance with the manufacturer's guidance. In addition, the IMS includes a daily requirement for site staff to check plant and site infrastructure to ensure continuing integrity and fitness for purpose. In the event that any damage breaches the integrity of the engineered containment so that it no longer meets the required standards, necessary remedial work will be completed as soon as practicable.</p> <p>In addition to the above, an Odour Management Plan (OMP) has been prepared which details how odour from the proposed activities will be managed. A copy of the OMP is provided as Appendix F of the Environmental Permit Application.</p>	<p>procedures should prevent emissions of odour.</p>	<p>annoyance</p>	<p>reduce the likelihood of impact</p>
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<p>Odour from the storage of outputs generated from the AD process</p>	<p>Occupiers of domestic dwellings listed in Table 2 above.</p> <p>Commercial and industrial units' users in listed Table 2 above.</p> <p>Amenities listed in Table 2 above.</p>	<p>Atmosphere</p>	<p>The whole AD process will be undertaken within an enclosed 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.</p> <p>As noted in Section 4, the AD is expected to generate three outputs. The first waste stream will comprise unwanted packaging and contaminants that are recovered from the organic waste as part of the pre-treatment process. Such waste streams are not putrescible in nature and therefore the risk of odour from this waste stream is expected to be low. Nevertheless, the building will also benefit from an odour control system which will comprise a two stage process using a biofilter fit with synthetic medium, this will be followed by reheat to reduce moisture and a second stage carbon filter . Details regarding the odour control system are provided in the Odour Management Plan (Appendix F of the Environmental Permit Application).</p> <p>The second output will be the biogas which will feed into 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.</p> <p>The third output relates to the digestate that's generated from the main AD process. As mentioned in Sections 4, SUEZ are seeking to utilise the digestate in a slurry, solid and liquid form which can be used as a fertiliser, compost or soil improver. In the event that the digestate is</p>	<p>Low – the management procedures should prevent emissions of odour.</p>	<p>Medium/Low - Odour annoyance</p>	<p>Low – The management procedures employed reduce the likelihood of impact</p>
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			<p>used in a slurry or liquid form, both will be stored within enclosed tanks inside the AD building. If the digestate is processed via the centrifuge to separate the solid and liquid fractions, the digestate cake 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. The digestate out area will utilise an odour abatement system which will comprise a biogas scrubber to treat ammonia and hydrogen sulphate. Details regarding the odour control system are provided in the Odour Management Plan (Appendix F of the Environmental Permit Application).</p> <p>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.</p> <p>SUEZ's IMS includes site inspection check sheets that include a daily requirement for site staff to qualitatively assess odour; if perceived to be excessive, measures will be taken to identify the source of any malodourous and take appropriate remedial action.</p> <p>In addition to the above, SUEZ's IMS includes policies and procedures that require all site infrastructure to be maintained in accordance with the manufacturer's guidance. In addition, the IMS includes a daily requirement for site staff to check plant and site infrastructure to ensure continuing integrity and fitness for purpose. In the event that any damage breaches the integrity of the engineered containment so that it no longer</p>			
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			<p>meets the required standards, necessary remedial work will be completed as soon as practicable.</p> <p>In addition to the above, an Odour Management Plan (OMP) has been prepared which details how odour from the proposed activities will be managed. A copy of the OMP is provided as Appendix F of the Environmental Permit Application.</p>			
<p>Odour from the storage of waste on site during contingencies such as mechanical breakdown</p>	<p>Occupiers of domestic dwellings listed in Table 2 above.</p> <p>Commercial and industrial units' users in listed Table 2 above.</p> <p>Amenities listed in Table 2 above.</p>	<p>Atmosphere</p>	<p>All putrescible wastes will be stored within a building prior to removal from the site. 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.</p> <p>In addition, the building will benefit from an odour control system which will minimise the risk of odour to impact sensitive receptors beyond the site boundary.</p> <p>In the event of a mechanical breakdown which is expected to disrupt the AD process for a prolonged period of time or increase the risk of odour emissions (i.e. breakdown of odour control system), SUEZ will consider a reduction of waste deliveries or cease accepting waste until appropriate remedial action has been taken. In addition, any waste stored in the reception area may be transferred off site to an appropriate permitted facility.</p> <p>SUEZ's IMS includes site inspection check sheets that include a daily requirement for site staff to qualitatively assess odour; if perceived to be excessive, measures will be taken to identify the source of any malodorous and take appropriate</p>	<p>Low – the management procedures should prevent emissions of odour.</p>	<p>Medium/Low – Odour annoyance</p>	<p>Low – The management procedures employed reduce the likelihood of impact</p>

			<p>remedial action.</p> <p>In addition to the above, SUEZ's IMS includes policies and procedures that requires all site infrastructure to be maintained in accordance with the manufacturer's guidance. In addition, the IMS includes a daily requirement for site staff to check plant and site infrastructure (including the odour control system) to ensure continuing integrity and fitness for purpose. In the event that any damage breaches the integrity of the engineered containment so that it no longer meets the required standards, necessary remedial work will be completed as soon as practicable.</p> <p>In addition to the above, an Odour Management Plan (OMP) has been prepared which details how odour from the proposed activities will be managed. A copy of the OMP is provided as Appendix F of the Environmental Permit Application.</p>			
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Table A2: Noise and Vibration Risk Assessment and Management Plan

What do you do that can harm and what could be harmed?			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Vehicle movements on site and haul roads.	Occupiers of domestic dwellings listed in Table 2 above.	Atmosphere.	The site is situated within a relatively remote area with the nearest sensitive receptor located approximately 660m from the proposed AD facility. In addition, vehicle movements for the existing IVC are currently limited to a specific amount as stipulated under the existing planning	Low – the site is situated within a relatively remote area and the management procedures should	Medium/Low - Intermittent noise and vibration disturbance.	Low – The management procedures employed reduced the likelihood

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<p>Noise from reverse vehicle warnings</p>	<p>Commercial and industrial units' users in listed Table 2 above.</p> <p>Amenities listed in Table 2 above.</p>		<p>permission. SUEZ do not propose any changes to this condition as a result of this proposal and therefore the risk of noise from vehicle movements is expected to be low.</p> <p>H&S Legislation is in place to ensure SUEZ protects its employees from the effects of noise.</p> <p>Loads will only be delivered to the site during the hours stipulated in the planning permission.</p> <p>Plant on site is fitted with "white noise" reversing beacons which minimise the intrusive nature of the safety measure.</p> <p>In accordance with SUEZ's IMS, site inspection check sheets include a daily requirement for site staff to qualitatively assess noise; if perceived to be excessive, measures will be taken to identify the source of any noise and take appropriate remedial action.</p> <p>All complaints received associated with noise will be recorded and investigated in line with company procedures.</p> <p>In addition to the above, 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 which could result in increased noise emissions</p> <p>All equipment and vehicles when not in regular use shall be switched off.</p>	<p>prevent emissions of noise.</p>		<p>of impact.</p>
<p>Noise from the loading/unloading of wastes</p>	<p>Occupiers of domestic dwellings listed in Table 2</p>	<p>Atmosphere.</p>	<p>The site is situated within a relatively remote area with the nearest sensitive receptor located approximately 660m from the proposed AD facility. In addition, the loading/unloading of waste will be undertaken within the confines of a</p>	<p>Low – the site is situated within a relatively remote area and the management</p>	<p>Medium/Low - Intermittent noise and</p>	<p>Low – The management procedures employed</p>

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	<p>above.</p> <p>Commercial and industrial units' users in listed Table 2 above.</p> <p>Amenities listed in Table 2 above.</p>		<p>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 noise generated on site to impact receptors beyond the site boundary.</p> <p>H&S Legislation is in place to ensure SUEZ protects its employees from the effects of noise.</p> <p>In accordance with SUEZ's IMS, site inspection check sheets include a daily requirement for site staff to qualitatively assess noise; if perceived to be excessive, measures will be taken to identify the source of any noise and take appropriate remedial action.</p> <p>All complaints received associated with noise will be recorded and investigated in line with company procedures.</p> <p>Drop heights will be minimised as much as practicable.</p>	<p>procedures should prevent emissions of noise.</p>	<p>vibration disturbance.</p>	<p>reduced the likelihood of impact.</p>
<p>Noise from the physical treatment of waste as part of the pre-treatment process</p>	<p>Occupiers of domestic dwellings listed in Table 2 above.</p> <p>Commercial and industrial units' users in listed Table 2 above.</p>	<p>Atmosphere.</p>	<p>The site is situated within a relatively remote area with the nearest sensitive receptor located approximately 660m from the proposed AD facility. In addition, the treatment of waste 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 noise generated on site to impact receptors beyond the site boundary.</p> <p>With the exception of vehicle movements, the AD facility will operate 24 hours a day in a similar manner to the existing IVC facility. As such, it's</p>	<p>Low – the site is situated within a relatively remote area and the management procedures should prevent emissions of noise.</p>	<p>Medium/Low - Intermittent noise and vibration disturbance.</p>	<p>Low – The management procedures employed reduced the likelihood of impact.</p>

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	Amenities listed in Table 2 above.		<p>considered that the risk of noise is not expected to increase.</p> <p>H&S Legislation is in place to ensure SUEZ protects its employees from the effects of noise.</p> <p>In accordance with SUEZ's IMS, site inspection check sheets include a daily requirement for site staff to qualitatively assess noise; if perceived to be excessive, measures will be taken to identify the source of any noise and take appropriate remedial action.</p> <p>In addition to the above, 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 which could result in increased noise emissions.</p> <p>All complaints received associated with noise will be recorded and investigated in line with company procedures.</p>			
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Table A3: Fugitive Emissions Risk Assessment and Management Plan

What do you do that can harm and what could be harmed?			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Hazard	Receptor	Pathway	Hazard
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What has the potential to cause harm?
To Air						
Dust emissions from vehicle movements	Occupiers of domestic dwellings listed in Table 2 above. Commercial and industrial units' users in listed Table 2 above. Amenities listed in Table 2 above. Priority habitats listed in Table 2. Portland Terrace Local Wildlife Site. Hawthorne Cottage Pasture (SSSI).	Atmosphere	Vehicles delivering waste to the site will be covered or sheeted to prevent the generation of dust whilst the waste is in transit. All vehicle drivers will comply with the speed limits within the site and on the access roads. The proposed AD facility and access road will largely comprise an impermeable paved surface and therefore vehicles will only drive over paved ground while they are delivering waste to the AD facility or exporting waste from the facility. As such, it is unlikely that any vehicles will track over any hardstanding/unmade ground and therefore the risk of dust is considered to be low. Nevertheless, in accordance with SUEZ's IMS, site inspection check sheets include a daily requirement for site staff to qualitatively assess dust; if perceived to be excessive measures will be taken to identify the source of any dust/particulates and take appropriate remedial action.	Low - Dust could potentially reach the nearby dwellings, commercial and industrial properties and designated sites and priority habitats when a strong wind blows in their direction. However, this is unlikely as these are greater than 250m from the facility and management actions should prevent this happening.	Low – human health risk in immediate vicinity, nuisance risk to nearby vehicles and property. In addition, ecological receptors may be susceptible to smothering.	Low – The management procedures employed reduced the likelihood of impact.
Dust generated during	Occupiers of domestic dwellings listed in Table 2	Atmosphere	The site is situated within a relatively remote area with the nearest sensitive receptor located approximately 660m from the proposed AD facility. In addition, the	Low - Dust could potentially reach the nearby	Low – human health risk in immediate	Low – The management

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loading/unloading of waste	<p>above.</p> <p>Commercial and industrial units' users in listed Table 2 above.</p> <p>Amenities listed in Table 2 above.</p> <p>Priority habitats listed in Table 2.</p> <p>Portland Terrace Local Wildlife Site.</p> <p>Hawthorne Cottage Pasture (SSSI).</p>		<p>loading/unloading of waste 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 dust generated from loading/unloading activities from the AD process to impact receptors beyond the site boundary.</p> <p>Nevertheless, in accordance with SUEZ's IMS, site inspection check sheets include a daily requirement for site staff to qualitatively assess dust; if perceived to be excessive measures will be taken to identify the source of any dust/particulates and take appropriate remedial action.</p> <p>General site housekeeping will ensure that dust does not build up on site and all dust generating activities will be monitored closely and site operatives will be vigilant and report any excessive dust issues to the Site Manager to be dealt with at the next available notice.</p>	<p>dwellings, commercial and industrial properties and designated sites and priority habitats when a strong wind blows in their direction.</p> <p>However, this is unlikely as these are greater than 250m from the facility and management actions should prevent this happening.</p>	<p>vicinity, nuisance risk to nearby vehicles and property. In addition, ecological receptors may be susceptible to smothering.</p>	<p>procedures employed reduced the likelihood of impact.</p>
Bioaerosols from the AD process	<p>Occupiers of domestic dwellings listed in Table 2 above.</p> <p>Commercial and industrial units' users in listed Table 2 above.</p> <p>Amenities listed in Table 2 above.</p> <p>Priority habitats listed in Table 2.</p>	Atmosphere	<p>With reference to the EA's ' Biological waste treatment: appropriate measures for permitted facilities', Section 11.4 indicates that a site specific bioaerosol risk assessment is only required if a facility is within 250m of a sensitive receptor. According to the list of receptors provided in Table 2 of this document, the nearest sensitive receptor to the site is located approximately 660m from the site. As such, it's considered that a site specific bioaerosol risk assessment is not required to support this application and was agreed by the EA as part of their pre-application advice.</p>	<p>Low - Unlikely as the site is situated within a relatively remote area and the nearest sensitive receptor is located over 250m from the proposed AD facility.</p>	<p>Low – human health risk in immediate vicinity.</p>	<p>Low – The management procedures employed reduced the likelihood of impact.</p>

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	Portland Terrace Local Wildlife Site. Hawthorne Cottage Pasture (SSSI).					
To Water						
Contaminated rainwater run-off. Run off of contaminants from wastes or non-wastes (e.g. oil, fuel)	Groundwater. Surface water features listed in Table 2. Northumbria Coast (SPA and Ramsar) Northumberland Marine (Ramsar)	Direct surface water run-off from site. Infiltration. Percolation.	<p>Waste that is accepted at the site will be stored within the confines of a building and therefore will minimise contact with rainwater.</p> <p>The proposed AD facility will benefit from an impermeable paved surface and a sealed drainage system to prevent the transmission of potentially contaminated liquids into groundwater beneath the site.</p> <p>Fuel storage will be provided and storage will be in line with latest legislation.</p> <p>All deliveries of fuel will be supervised to ensure no spillages occur.</p> <p>Emergency spillage procedures are in place to ensure any oil, hydraulic fluids etc. are dealt with before they enter the drainage system. A supply of absorbent granules will be stored on site. The drainage system will be sealed off to prevent discharge in the event of an incident.</p> <p>Interceptors are cleaned at suitable intervals to maintain their effectiveness and are fitted with high level alarms.</p> <p>The hardstanding and drainage system are inspected as required by the IMS. The results of the inspections are recorded. Any remedial actions required are recorded in the site diary.</p> <p>Weekly check sheets include a requirement for site staff to undertake visual inspections of the status of the drainage.</p>	<p>Low – The engineered systems and infrastructure are designed to prevent any discharge of contaminated rainwater run off</p>	<p>Medium – contamination of local water bodies and/or groundwater</p>	<p>Low - due to the design of the site</p>

Pests/Scavenging birds						
Birds and Pests.	Occupiers of domestic dwellings listed in Table 2 above. Commercial and industrial units' users in listed Table 2 above. Amenities listed in Table 2 above. Priority habitats listed in Table 2. Portland Terrace Local Wildlife Site. Hawthorne Cottage Pasture (SSSI) Northumbria Coast (SPA and Ramsar) Northumberland Marine (Ramsar)	Air. Ground.	<p>All putrescible waste will be unloaded and processed from within an enclosed 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 interactions between birds/pests and the waste, therefore reducing impact on receptors beyond the site boundary.</p> <p>Waste acceptance procedures include a requirement for incoming waste to be checked for fly infestation either at the weighbridge or as the load is tipped.</p> <p>Any wastes found to contain flies on entry to the site will either be treated appropriately with the fly spray or rejected from the site.</p> <p>Routine inspections are undertaken as required by the IMS and appropriate action will be taken in the event that the inspections indicate the presence of any pests or vermin.</p> <p>A pest control contractor will be appointed to attend the site at regular intervals (to be determined) by the contractor in accordance with IMS procedures. Additionally, the pest control contractor will be called to site to deal with any vermin/pest related problems that may arise between scheduled visits.</p> <p>Pests will be managed in accordance with the Pest Management Plan that is provided as Appendix G of the Environmental Permit Application.</p>	Low – The management actions should reduce the risk	Medium - Nuisance, property damage and risk of vermin spread infections.	Low – the management procedures in place reduce likelihood of impact.
Mud						
Mud arising from vehicles movements	Highways listed in Table 2.	Tracked by vehicles.	The proposed AD facility and access road will largely comprise an impermeable paved surface and therefore vehicles will only drive over concreted ground while they are	Low – The management actions	Medium - Mud on roads is unsightly and can increase	Low – the management

			<p>delivering waste to the AD facility or exporting waste from the facility. As such, it is unlikely that any vehicles will track over any hardstanding/unmade ground and therefore the risk of mud is considered to be low.</p> <p>The wider permitted facility benefits from a wheel wash which will be used by all outgoing vehicles and therefore minimise the risk of mud to develop.</p> <p>IMS procedures require that all vehicles leaving the site are inspected for cleanliness, any vehicles not reaching the required standard will be manually cleaned before leaving site to prevent material being tracked onto local highways.</p> <p>A street sweeping vehicle will be contracted in to attend to any specific instances of mud being tracked onto local highways.</p>	should reduce the risk	the risk of road traffic incidents.	procedures in place reduce likelihood of impact.
Litter						
Litter arising from vehicle movements and high winds.	<p>All receptors listed in Table 2.</p> <p>Northumbria Coast (SPA and Ramsar)</p> <p>Northumberland Marine (Ramsar)</p>	Air Tracked by vehicles.	<p>Litter may arise from unwanted packaging and contaminants removed from the organic waste material as part of the pre-treatment process. All packaging and contaminants will be stored within a skip which is situated 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 risk of wind-blown litter.</p> <p>Vehicles will be sheeted/netted as necessary when entering/leaving the site to prevent fugitive emissions of litter/waste materials onto the public highways.</p> <p>SUEZ's IMS includes site inspection check sheets that include a daily requirement for site staff to check for litter on site. If litter is identified, site staff will undertake litter picking as required.</p>	Low – The management actions should reduce the risk	Medium - Local nuisance.	Low – the management procedures in place reduce likelihood of impact.

Table A4: Accident and Incident Risk Assessment and Management Plan

What do you do that can harm and what could be harmed?			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Fire or failure to contain firewater	<p>Groundwater.</p> <p>Site Operators</p> <p>Surface water features listed in Table 2.</p> <p>Occupiers of domestic dwellings listed in Table 2 above.</p> <p>Commercial and industrial units' users in listed Table 2 above.</p> <p>Amenities listed in Table 2 above.</p> <p>Priority habitats listed in Table 2.</p> <p>Portland Terrace Local Wildlife Site.</p>	<p>Infiltration.</p> <p>Contaminated rainwater runoff.</p>	<p>With reference to the EA's 'Fire prevention plans: environmental permits' guidance, Section 3 indicates that a Fire Prevention Plan is not required for AD facilities that comprise a wet process. The proposed AD facility will largely comprise a wet process and therefore the risk of combustion from the waste is considered to be low.</p> <p>There will be strict waste acceptance procedures in place at the site to prevent the acceptance of non-conforming waste types. Details of the waste acceptance procedures are provided in the BATOT document (Appendix C of the Environmental Permit Application).</p> <p>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 which may result in an increased risk of fire.</p> <p>Smoking is only permitted in designated areas.</p> <p>Daily checks of fire safety equipment will be carried out in accordance with SUEZ's IMS.</p>	Low – the management actions should prevent fire	Medium- possible respiratory irritation from smoke inhalation Nuisance from smoke and emissions of particulates	Low – due to Management system in place

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	<p>Hawthorne Cottage Pasture (SSSI).</p> <p>Northumbria Coast (SPA and Ramsar)</p> <p>Northumberland Marine (Ramsar)</p>		<p>The proposed AD facility will benefit from an impermeable concrete surface and a sealed drainage system to prevent the transmission of potentially contaminated liquids into groundwater beneath the site.</p> <p>In addition, a bund will be installed around the digester tanks and associated infrastructure in accordance with CIRIA 736 guidance. The bund is designed to mitigate against artificial flood risk in the event of a digester tank fail. However, the bund will also be used to contain any firewater that may be generated in the event of a fire. The bund will be designed in line with the CIRIA 'Containment systems for the prevention of pollution (C736)' document.</p> <p>In the event of a fire, the drainage system will be sealed off to prevent discharge in the event of an incident.</p>			
<p>Spillage of oil, fuel or hydraulic fluid from plant colliding with infrastructure, mechanical failure, leak during refuelling or maintenance</p>	<p>Groundwater.</p> <p>Surface waters listed in Table 2.</p> <p>Northumbria Coast (SPA and Ramsar)</p> <p>Northumberland Marine (Ramsar)</p>	<p>Surface run-off.</p> <p>Infiltration.</p> <p>Percolation</p>	<p>The fuel oil storage facility on site is fully bunded in compliance with the Control of Pollution (Oil Storage) (England) Regulations 2001 and are located on an impermeable concrete surface.</p> <p>All other fuel/oil storage on site takes place in accordance with relevant legislation and in suitably bunded containers.</p> <p>The site is provided with impermeable concrete surfaces to prevent the transmission of potentially contaminated liquids into groundwater beneath the site.</p> <p>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 which will minimise the risk of leaks and/or spillages.</p> <p>In addition, the IMS includes a daily requirement for site staff to check plant and site infrastructure to</p>	<p>Low – the Management actions should prevent accidents and the engineered systems and infrastructure are designed to prevent any discharge of contaminated water run off</p>	<p>Medium - Pollution of local water courses, groundwater and aquifers</p>	<p>Low - The management procedures in place should prevent this occurring</p>

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			<p>ensure continuing integrity and fitness for purpose. In the event that any defects are identified so that it no longer meets the required standards, necessary remedial work will be completed as soon as practicable.</p> <p>The AD plant will benefit from a process control monitoring system which will monitor the operational requirements of the plant and allow faults to be identified. This will ensure that remedial action is undertaken as soon as practicable.</p>			
Flooding.	<p>Groundwater.</p> <p>Surface water bodies listed in Table 2.</p> <p>Northumbria Coast (SPA and Ramsar)</p> <p>Northumberland Marine (Ramsar)</p>	<p>Infiltration.</p> <p>Contaminated surface water runoff.</p>	<p>The AD plant will benefit from a process control monitoring system which will monitor the operational requirements of the plant and therefore minimise the risk of flooding that may occur from the overflowing of tanks or leaks due to failure in pipework.</p> <p>A bund surrounding the digester tanks and associated infrastructure is proposed to mitigate against artificial flood risk, to external receptors. The bund will have a maintenance gate that will remain closed except for access. The expected volume of the enclosed bund area with the associated infrastructure in place is will be sufficient to contain the flooding. Therefore, these potential artificial flooding sources can be contained on site and do not pose a risk to downstream receptors</p>	Low - the management actions should prevent fire	<p>Medium - Disruption to works on site.</p> <p>Contamination of local groundwater and/or surface water.</p> <p>Contamination of local agricultural land.</p>	Low - due to Management system in place

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<p>Vandalism / theft – damage to waste containment and fuel storage infrastructure</p>	<p>Groundwater. Surface water features listed in Table 2. Occupiers of domestic dwellings listed in Table 2 above. Commercial and industrial units' users in listed Table 2 above. Amenities listed in Table 2 above. Priority habitats listed in Table 2. Portland Terrace Local Wildlife Site. Hawthorne Cottage Pasture (SSSI). Northumbria Coast (SPA and Ramsar) Northumberland Marine (Ramsar)</p>	<p>Unauthorised entry to the site.</p>	<p>Although the proposal is to remove the existing IVC and replace with an AD facility, there are no proposed changes to the site boundary and therefore the risk of unauthorised access is not expected to increase.</p> <p>Nevertheless, the following measures are currently in place at the site and will continue to be implemented to minimise the risk of unauthorised access.</p> <p>All waste accepted for the AD facility will be stored 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. Perimeter fencing and gates are installed to prevent unauthorised access to the site outside operational hours.</p> <p>A CCTV system will be installed to deter and record any unauthorised activity.</p> <p>Procedures within SUEZ's IMS include a daily requirement to check the condition of the security measures and take appropriate remedial action in the event of any damage.</p>	<p>Low – the management actions should prevent unauthorised access and the engineered systems and infrastructure are designed to prevent any discharge of harmful liquids</p>	<p>Medium - Pollution of local water courses, groundwater and aquifers</p>	<p>Low - The management procedures in place should prevent this occurring</p>
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APPENDIX B – NATURE AND HERITAGE CONSERVATION SCREEN