Greendale Business Park (Unit 29B)

Environmental Permit Application

Environmental Risk Assessment

May 2019

Prepared on behalf of Synergy Asset Services Limited

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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 B2 of the Environmental Permit application form, and has been prepared on behalf of the Operator, Synergy Asset Services Limited (Synergy), by WYG.

1.1.2 Synergy are seeking to gain an Environmental Permit to allow the acceptance and temporary storage of used hazardous and non-hazardous gas cylinders at their site on Greendale Business Park. The gas cylinders will then be transferred off site to a suitable permitted facility for treatment and disposal/and or recovery.

1.1.3 This Environmental Risk Assessment (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 Environment Agency Risk Assessment guidance. It specifically relates to the potential risks associated with the following risk types:-

- Odour;
- Noise and vibration;
- Fugitive emissions; and
- Accidents and incidents.

2.1.2 This risk assessment addresses the above, and is based on the following methodology:-

- Identification of potential sources of risk;
- Identification of all potential receptors to risk; and
- Risk assessment of each risk type.

2.1.3 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. The ERA is provided in Appendix A and is summarised below.

2.2 Sources

2.2.1 The potential sources of risks have been considered for each risk type, as shown in Appendix A. The sources of risk for this application have been identified as:-

<u>Odour</u>

- Waste materials.

<u>Noise</u>

- Plant and machinery.
- Vehicle movements to/from the site.
- Vehicle movements within the site.

Fugitive emissions

- Particulate matter (dust).
- Mud and litter.
- Scavenging birds, pests and vermin.

Accidents

- Leaks/spillages.
- Fire or failure to contain firewater.
- Flooding.
- Vandalism.

2.3 Pathways

2.3.1 The pathways have been identified for each risk type as shown below in Table 1:

Table 1: Potential Pathways

Risk Type	Pathway
Odour	Atmosphere
Noise	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, have been listed in Table 2 and are shown on Drawing Number SYN/A108683/GBP/REC/01. The main pathway for the identified sources will be the 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 2.

Table 2: Location of potential receptors in relation to the proposed activity

Receptor	Direction from Operational Area	Minimum Distance from Proposed Site Boundary (approx. m)
Designated ecological habitats/sites of geological importance e.g. Ramsar, SAC, SPA, SSSI, LNR, NNR, LWS		
N/A		
Domestic Dwellings/ Farmhouses		
Orchard House	E	450
Brooklands Farm	E	450
Little Greendale Farm	NE	630
Upham Farm	N	830
Winkleigh Farm	E	930
Hogsbrook Farm	S	950
Honey Cottage	SW	685
Residential area of Woodbury Salterton	SW	980
Commercial and Industrial Premises		
Industrial units on Greendale Business Park	N,S,E,W	Adjacent
Schools / Hospitals / Shops		
Woodbury Salterton Church of England Primary School	SW	974
Highways or Minor Roads		
A3052	N	520
Recreation/Open Spaces		
Brooklands Caravan Park	E	430
Grade II Listed Buildings;		
Greendale Barton	SE	310
Higher Greendale Farmhouse	SE	400
Milestone at SY 015 904	N	500
The Old Vicarage	SW	905
The Parish Church of Holy Trinity	SW	974
Barn approximately 35 metres south east of Upham Farmhouse	N	830
Linhay 50 metres east of little paddocks	SW	980
9 Grade II Listed Buildings on Village Road	SW	982
Priority Habitats		
Deciduous Woodland	E	275
Sensitive land uses e.g. farmland, allotments, commercial fish farms		
Agricultural Land	N	150
Agricultural Land	E	280
Agricultural Land	SW	230
Agricultural Land	W	700
Surface Water e.g. rivers and streams		
Grindle Brook	S	195
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.		

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 Environmental Risk Assessment (Appendix A) indicates that the proposed facility will have no significant impacts in terms of odour, noise and vibration, and fugitive emissions, and the likelihood of accidents is minimal.

Drawings

SYN/A108683/GBP/REC/01 – Receptor Plan

Appendices

Appendix A – Amenity and Accident 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 storage of waste.	Occupiers of domestic dwellings listed in Table 2 above. Occupants of the schools and hospital listed in Table 2 above. Workers in the business park?	Atmosphere.	Strict waste acceptance procedures will be employed on site to minimise the risk of non-compliant wastes being accepted. Details of the waste acceptance procedures are detailed in the Operating Techniques (Appendix B of the Environmental Permit Application). As part of the waste acceptance checks, all cylinders that are delivered to the site will be visually inspected to identify any that are damaged which may result in increased odorous emissions (via leaking). Any cylinders that are found to be leaking will not be accepted on site and will be moved to a designated quarantine area prior to removal off site to a suitable permitted facility for treatment and disposal/or recovery. The designated quarantine area will be situated outside and therefore will be well-ventilated. The cylinders will not be removed from the site until the leaking has ceased or slowed sufficiently to present no threat of a flammable atmosphere being generated during transport. All gas cylinders will be inspected on a regular basis using a suitable flammable gas detector in order to identify any leaking cylinders. If a canister is found to be leaking, it will be removed from the storage area and stored within the designated quarantine area prior to removal off site to a	Unlikely due to the measures in place.	Odour annoyance	Not significant due to management techniques employed.

			suitable permitted facility for treatment and disposal or recovery. The cylinders will be stored in Intermediate Bulk Containers (IBCs) within the designated waste storage area. This area will be situated outside and therefore, the cylinders may be subject to rusting which can increase the risk of leaking. The site is a small site operated by a single operative, who is responsible for keeping a log of the quantity of IBCs on the site at any given time, to ensure that the allowed storage capacity is not exceeded. The information is sent to the company's main office at their Canterbury site. Synergy regularly implement a regular collection procedure from the Exeter site to the main site at Canterbury, ensuring that waste is never at the Exeter site for more than three months, which is the maximum storage period specified in the Environment Agency's 'Guidance for the storage and treatment of aerosol cylinders and similar packaged wastes' document. All information will be available at the head office in Canterbury.			

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.	Occupiers of domestic dwellings listed in Table 2 above. Occupants of the schools and hospital listed in Table 2 above. Workers in business park? Priority Habitats listed in Table 2.	Atmosphere	Loads will only be delivered to the site during the day and not during the evening or night which is defined as 19:00 – 07:00 under the Environment Agency's Horizontal Guidance for Noise Part 2 – Noise Assessment and Control (IPPC H3 (part 2)). The delivery of waste will take place in a controlled manner to keep noise/vibration to a minimum. All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer's requirements to minimise the generation of noise. All equipment and vehicles when not in regular use shall be switched off. All noise and vibration generating activity will be monitored closely and the site operative will be vigilant and take action if needed.	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.
Noise from reverse vehicle warnings.	Occupiers of domestic dwellings listed in Table 2 above. Occupants of the schools and hospital	Atmosphere	All noise generating activity will be undertaken during the day and not during the evening or night which is defined as 19:00 – 07:00 under the Environment Agency's Horizontal Guidance for Noise Part 2 – Noise Assessment and Control (IPPC H3 (part 2)). Utilisation of low level warning signals.	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.

	listed in Table 2 above. Priority Habitats listed in Table 2.		All noise and vibration generating activity will be monitored closely and the site operative will be vigilant and take action if needed.			
Noise and vibration from loading and unloading of wastes.	Occupiers of domestic dwellings listed in Table 2 above. Occupants of the schools and hospital listed in Table 2 above. Priority Habitats listed in Table 2.	Atmosphere	Loads will only be delivered to the site during the day and not during the evening or night which is defined as 19:00 – 07:00 under the Environment Agency's Horizontal Guidance for Noise Part 2 – Noise Assessment and Control (IPPC H3 (part 2)). All plant and machinery will have effective silencers where practicable and be maintained in accordance with the manufacturer's requirements to minimise the generation of noise. The loading/unloading of wastes will be undertaken in a controlled manner to keep noise/vibration to a minimum. Vehicles will be directed by the site operative to minimise the drop height when depositing cylinders at the site. All noise and vibration generating activity will be monitored closely and the site operative will be vigilant and take action if needed.	Intermittent during operating hours.	Intermittent noise and vibration disturbance.	Not significant due to management techniques employed.

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**	**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.
To Air						
Dust from vehicle movements	Occupiers of domestic dwellings listed in Table 2 above. Occupants of the schools and hospital listed in Table 2 above. Workers in the business park. Priority Habitats listed in Table 2. Surrounding agricultural land.	Atmosphere	The proposed waste types have a low dust potential and therefore the risk of dust generation at the site is considered to be low. There will be a routine programme of housekeeping which will include the sweeping and cleaning of the routes around the site. This will reduce the build up of dust on surfaces which may later become airborne. All vehicle drivers will comply with the speed limits within the site and on the access roads to prevent the re-suspension and entrainment of dust. The site operative will undertake a daily visual assessment of dust levels and implement remedial action if needed.	Unlikely due to the nature of the waste accepted at the site.	Nuisance – dust on cars, clothing, vegetation, etc. Smothering. Nutrient enrichment.	Not significant due to management techniques employed.
To Water						
Contaminated rainwater run-off.	Groundwater Occupiers of domestic dwellings listed in Table 2 above. Occupants of the schools and	Direct surface water run-off from site. Infiltration. Percolation.	Any potential gases that may be present within the waste cylinders will be contained within an air tight metal casing which will be closed to the atmosphere. Synergy do not propose to accept any cylinders that are damaged or leaking and there will be measures in place as part of the waste acceptance procedures to ensure that no damaged or leaking cylinders are accepted at the site. Details of	Unlikely due to the measures in place.	Contamination of surface water bodies and groundwater.	Not significant due to management techniques employed.

	hospital listed in Table 2 above. Other occupants of the business park.		these waste acceptance procedures are provided in the Operating Techniques. On this basis, it is considered that any incidental rainfall that does come into contact with the cylinders will only come into contact with the metal casing of the cylinders and therefore will not come into contact with any potential gases. All gas cylinders will be stored within IBCs which will have a series of holes (between 4 to 5 holes per container) drilled at the bottom measuring 1 inch in diameter. This will allow any rainwater that collects in the IBC to drain out and therefore minimise the risk of corrosion. Furthermore, it is proposed that cylinders will not be stored on site for any longer than two weeks before being transferred off site for disposal/and or recovery. Based on this turnaround period, it is considered that the risk of corrosion is low and therefore the risk of rainwater coming into contact with any gases is also low. All storage containers and impermeable surfaces will be regularly inspected 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.			

Pests/Scavenging birds						
Birds and Pests.	Occupiers of domestic dwellings listed in Table 2 above. Occupants of the schools and hospital listed in Table 2 above. Priority Habitats identified in Table 2. Surrounding agricultural land.	Air. Ground.	The proposed waste types are not putrescible and will not attract pests, vermin and/or scavenging birds. Waste acceptance procedures will be in place to ensure only permitted waste types are accepted. The site operative will undertake regular reviews of pests and scavenging birds at the site and will be vigilant and implement remedial action if needed.	Very unlikely.	Nuisance to local residents. Predation of species in Priority Habitats.	Not significant due to management techniques employed.
Mud/Litter						
Mud arising from vehicles movements	Highways identified in Table 2.	Tracked by vehicles.	There will be a routine programme of housekeeping which will include the sweeping and cleaning of the routes around the site. It is therefore highly unlikely that any mud will be tracked onto the highways. The site will be inspected on a daily basis by the site operative and this will include a visual inspection of the access to the facility and the local highways. In the event that mud is noted to be present on the internal roads or the site entrance and highway, a road sweeper or bowser will be utilised as necessary.	Unlikely due to measures in place.	Mud on roads is unsightly and can increase the risk of road traffic incidents.	Not significant due to management techniques employed.
Litter arising from vehicle movements and high winds.	All receptors identified in Table 2.	Air Tracked by vehicles	Due to the nature of the proposed waste types, litter will not be generated at the site. The proposed waste types are not considered to represent a significant risk of litter. A vigilant watch for litter will be undertaken by the site operative. In the unlikely event that litter is generated by the activity, the operative will implement a litter collection as necessary.	Very unlikely due to measures in place.	Local nuisance.	Not significant due to the management techniques employed.

Table A4 – Accident 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.	Groundwater. Occupiers of domestic dwellings listed in Table 2 above. Occupants of the schools and hospital listed in Table 2 above. Priority Habitats listed in Table 2. Surrounding agricultural land. Other units in the business park.	Infiltration. Contaminated rainwater runoff.	All cylinders will be stored outside which will provide sufficient ventilation to minimise the build-up of combustible gases. As part of the waste acceptance checks, all cylinders that are delivered to the site will be visually inspected to identify any cylinders that are damaged which may result in increased risk of combustion (via leaking). Any cylinders that are found to be leaking will not be accepted on site and will be moved to a designated quarantine area prior to removal off site to a suitable permitted facility for treatment and disposal or recovery. The designated quarantine area will be situated outside and therefore will be well ventilated. The quarantine area will also be situated away from any flammable materials or ignition sources. The cylinders will not be removed from the site until the leaking has ceased or slowed sufficiently to present no threat of a flammable atmosphere being generated during transport. All gas cylinders will be inspected on a regular basis using a suitable flammable gas detector in order to identify any leaking cylinders. If a canister is found to be leaking, it will be removed from the storage area and stored within the designated quarantine area prior to	Very unlikely due to the measures in place.	Contamination of local groundwater and/or surface water. Local nuisance from smoke.	Not significant due to management techniques employed.

			removal off site to a suitable permitted facility for treatment and disposal/or recovery. The most likely source of ignition from the proposed activity will be from mobile plant and vehicles delivering the cylinders to the site. To minimise the risk of combustion, waste delivery vehicles and mobile plant will be required to switch their engines off when cylinders are being loaded/unloaded from the vehicle. In addition, all mobile plant will be specially adapted for use in flammable atmospheres to ensure that there is no risk of combustion when the plant is moving any leaking cylinders on site. At the end of each working day, mobile plant will be stored within a designated area as shown on the Site Layout Plan (Drawing Number SYN/A108683/PER/01). Given that the waste storage areas will be situated outside, there is the potential for steel cylinders to rust which can result in an increased risk of gas leaks. As such, the site operative will remain vigilant during the waste storage inspection and during operating hours to identify any cylinders that may be affected by rusting. Any cylinders that are found to be rusting will be prioritised for onward treatment and disposal and/or recovery. Given that the site will accept cylinders that are manufactured from different materials (i.e. aluminium, steel, mixed etc.), there is a potential risk of thermite spark between the cylinders during handling and storage activities. It is proposed that each waste stream will be stored within separate containers to prevent cross contamination. This procedure will also consider the construction material of the canister to prevent the risk of thermite spark.			

			For example, non-hazardous waste cylinders that are manufactured from aluminium will be stored in one IBC and non-hazardous waste cylinders manufactured from steel will be stored in another.			
Leaks/spillages	Groundwater.	Surface run-off. Infiltration. Percolation	Synergy do not propose to accept any canisters that are damaged or leaking and there will be measures in place as part of the waste acceptance procedures to ensure that no damaged or leaking canisters are accepted at the site. Details of these waste acceptance procedures are provided in the Operating Techniques (Appendix B of the Environmental Permit Application). All canisters that are stored on site will be visually inspected on a regular basis to ensure the continuing integrity and fitness for purpose. In the event that a canister is identified that may be susceptible to corrosion within the two week storage period, the canister will be prioritised for onward transfer to minimise the risk of corrosion. Furthermore, in the event that any damage breaches the integrity of the canister so that it no longer meets the required standards, the canister will be subject to the waste rejection procedures as specified in the Operating Techniques. All storage containers will be regularly inspected 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.	Unlikely due to measures in place.	Contamination of land and watercourses.	Not significant due to management techniques employed.

			The operator will undertake regular maintenance of plant equipment in accordance with manufacturer's guidance. Daily vehicle/plant checks to ensure any fuel/oil leaks etc. are repaired as soon as possible.			
Flooding.	Groundwater.	Infiltration. Contaminated surface water runoff.	According to the Flood Map for Planning Service (FMPS), the site is not situated within an area at risk of flooding and the nearest surface water feature to the site is the Grindle Brook which is located approximately 195m south of the site. Furthermore, given the nature of the proposed activities, it is considered that the risk of flooding from the proposed activity is low.	Unlikely due to measures in place.	Disruption to works on site. Contamination of local groundwater and/or surface water. Contamination of local agricultural land.	Not significant due to management techniques employed.
Vandalism.	Occupiers of domestic dwellings listed in Table 2 above. Occupants of the schools and hospital listed in Table 2 above. Priority Habitats identified in Table 2. Surrounding agricultural land.	Unauthorised entry to the site.	The site will be surrounded by security fencing and site entrances will be protected by similar lockable gates. Security fencing and gates will be inspected on a daily basis. Any identified damage to the fence or gates that could prejudice the site security will be recorded and temporarily repaired as necessary before the end of that working day. Permanent repair or replacement will be undertaken as soon as practicable. There will be procedures in place that require all visitors to the site to sign in on arrival and sign out on departure. If there are any incidents of unauthorised access, inspections will be undertaken of the site, including all fencing, and any maintenance works will be undertaken promptly.	Unlikely due to measures in place.	Release of polluting materials to air (smokes or fumes) water or land.	Not significant due to management techniques employed.