



ENVIRONMENTAL RISK ASSESSMENT

Phoenix Green Solutions Green Waste Composting Facility

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Sol Environment Ltd

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1. INTRODUCTION

As part of an application for an environmental permit Operators must assess the risk to the environment and human health from the activities they seek to permit. This Environmental Risk Assessment has been undertaken in accordance with the online guidance for undertaking environmental risk assessments. Environmental risks relevant to the proposed activities are:

- Emissions to Air;
- Emissions to Water;
- Emissions to Land;
- Odour;
- Bioaerosols;
- Dust;
- Noise;
- Litter;
- Pests;
- Vandalism;
- Fire; and
- Incompatible Wastes.

For each of the above environmental criteria the approach to the assessment has followed the following four stage process:

- Identify the risks;
- Assess the risks (assuming those control measures proposed are in place);
- Choose appropriate further measures to control these (if required); and
- Present the assessment.

Environmental Risk Assessment						
Hazard	Receptor	Pathway	Risk Management Techniques	Probability of Exposure	Consequence	Overall Risk (following Mitigation)
Point Source \ Releases to Air	Atmosphere	Airborne	<ul style="list-style-type: none"> The facility processes non-hazardous green waste. There are no point source releases to air on site. The composting process takes place within a sealed AgBag system, therefore there are no emissions to air. Incoming green waste and product is stored onsite within piles. There is no turning of these waste piles, minimising the risk of emission to air from disturbance of the material. 	Low: offsite receptor impacts	Air Pollution	VERY LOW due to the proposed processes on site
Emissions to Water	Groundwater / Geology / Surface Water	Waterborne	<ul style="list-style-type: none"> There will be no direct process emissions to controlled water arising from the Installation. All external surface water runoff from the concrete slab drains to a sealed lagoon. The water within the lagoon is used for a supply of firewater if required. The unloading of delivery vehicles and storage of waste will take place externally upon on concrete hardstanding. In the event of a spillage, the spillage will be contained and cleaned up immediately. The AgBag composting process is completely sealed and therefore takes place on made ground as previously agreed by the EA. There is no risk to groundwater from this activity as it is a sealed operation. 	Low: all runoff is controlled on site, therefore the probability of exposure is low.	Contamination	VERY LOW due to the proposed management techniques and drainage arrangements

			<ul style="list-style-type: none"> • No rainwater ingress of the bags is possible and no leachate is produced from the composting process. • The main finished product storage pile is stored on concrete hardstanding. If additional storage is required, the finished compost will be stored in the surplus finished compost pile on made ground. Please note, at this stage the compost is a product and no longer a waste. This material does not pose any risk to groundwater. • The drainage system is regularly inspected and maintained. • In the unlikely event of a fire, the firewater will be contained within the lagoon and tankered off site for disposal. • There are no tanks containing hazardous substances stored on site. 			
Emissions to Land	Groundwater / Geology	Spills / Leaks	<ul style="list-style-type: none"> • There will be no emissions to land arising from the proposed facility. • The AgBag system is a completely sealed process preventing any emissions to land during the composting process. • Any waste storage and pre-processing is carried out on good quality concrete hardstanding. • Spill kits will be strategically located around site. • Minor spills to be cleaned up immediately, using spill kits. Resultant materials to be placed in container for off-site disposal to appropriate facility, if necessary. 	Low: spills / leaks could potentially contaminate the ground / groundwater underneath the site.	Contamination	VERY LOW due to the proposed risk management techniques

			<ul style="list-style-type: none"> • Immediate action to be taken in event of any major spills. Spillage to be cleared immediately and placed in containers for offsite disposal. EA to be informed. • The run-off lagoon is lined preventing any emission to land. 			
Noise	Local Residents	Airborne	<ul style="list-style-type: none"> • The only potential noise sources on site consist of delivery and export vehicles, on site vehicles and the shredding and screening equipment. • The amount of deliveries and use of processing equipment is variable dependent on the season. In the summer months, more deliveries will be received and the processing equipment will be used more frequently. In winter months there will be minimal deliveries and processing carried out on site. • The site only accepts deliveries and carries out processing in the daytime, between 09:30am – 6pm Monday – Friday. Although allowed, the site does not accept deliveries or carry out any processing on weekends. • The site is also surrounded by a 3m high sealed earthen bund surrounding the site and topped with thick, well-established vegetation. • The site has been operational for 8 years and has never received a noise complaint. • Due to this it is considered that there is very little potential for noise complaints arising from site activities, any complaints will be immediately investigated and appropriate measures implemented if necessary. 	Medium: due to the nature of the activities, noise emissions from the plant are inevitable and could cause offsite receptor impacts	Nuisance	LOW due to the proposed risk management techniques

Odour	Local Residents	Airborne	<ul style="list-style-type: none"> • The site has stringent waste acceptance procedures that ensure that no excessively odourous waste will be accepted on site. • The composting process takes place within a sealed AgBag system, therefore there is no risk of odourous emissions from the main composting process. • There are incoming green waste storage piles and finished product storage piles on site. There is no turning of these waste piles, reducing the risk of odorous emissions due to disturbance of external storage piles. • The site has a Cobra Odourmaster Mobile Unit that is used during shredding / screening activities to reduce any potential odourous emissions from this part of the process. • The site will be managed in accordance with the sites dedicated Odour Management Plan which includes odour monitoring at points around the site boundary. • The site has been operational for 8 years and has never received an odour complaint. • Due to this it is considered that there is very little potential for odour complaints arising from site activities, any complaints will be immediately investigated and appropriate measures implemented if necessary. 	Moderate: green waste has the potential to be odorous by its nature	Nuisance	LOW due to the proposed risk management techniques
Bioaerosols	Local Residents	Airborne	<ul style="list-style-type: none"> • The Ag-Bag composting system is a sealed system, eliminating the release of bioaerosols from the composting process. • There are incoming green waste piles and finished product storage piles on site. There is no turning of these waste piles, eliminating the 	Moderate: composting has potential for bioaerosol emissions	Nuisance	LOW due to the proposed risk management techniques

		<p>risk of bioaerosols emissions due to pile disturbance.</p> <ul style="list-style-type: none"> • Bioaerosol sampling is carried out annually as per the existing permit requirements. • Under normal operation green waste will be stored for 1 week in one of the two reception bays. • Waste will be processed on a first in first out basis. • The site has a monitoring system in place that is defined in the sites operating procedures which details the temperature and moisture monitoring requirements • Waste will be shredded via the sites slow speed shredders in the screening / shredding area. The mobile dust / odour suppression system will be used during shredding / screening activities. • Weather will be recorded in the site diary. • The pre-treatment (shredding) and screening of finished product will not take place during unfavourable meteorological conditions. The activities will cease if the wind direction is towards any sensitive receptors. • A bioaerosol risk assessment is provided within Annex C of the permit application. 			
Dust		<ul style="list-style-type: none"> • The site has a dedicated mobile dust suppression system that will used during any activities that has potential for dust emissions. • The moisture content of the green waste is monitored. • Waste will be shredded via one of the two shredders within the screening / shredding 	Moderate: due to external storage and processing activities	Nuisance	LOW due to the proposed risk management techniques

			<p>area. The mobile dust / odour suppression system will be used during shredding activities.</p> <ul style="list-style-type: none"> • The finished product will be screened within the screening / shredding area. The mobile dust / odour suppression system will be used during shredding activities. • The pre-treatment (shredding) and screening of finished product will not take place during unfavourable meteorological conditions i.e high winds. The activities will cease if the wind direction is towards any sensitive receptors. • Roads and processing areas will be dampened down at least daily during dry conditions. • The site will be managed in accordance with the sites Dust Management Plan. 		
Litter	Local Residents	Airborne	<ul style="list-style-type: none"> • The site will be actively managed in order to reduce litter. • After unloading of the waste, any litter will be picked out the waste and stored in a sealed skip. • The load will be rejected if, by subjective assessment, it contains more than 5% litter. • Roads and operational areas will be regularly swept and inspected, with any litter removed. • The site is also surrounded by a 3m high sealed earthen bund surrounding the site and topped with thick, well-established vegetation. • Any material removed during the screening of compost is stored in a sealed skip. • A programme of litter picking on and around site is carried out throughout and at the end of each working day. The site shall be inspected daily by the site manager and any litter or 	Moderate: due to external storage and processing activities	Nuisance LOW due to the proposed risk management techniques

			<p>accumulated debris shall be dealt with immediately.</p> <ul style="list-style-type: none"> Site records will be kept and the sites management system should identify measures for litter control. All incoming and exporting waste vehicles will be covered. 			
Pests	Local Residents	Airborne and migration	<ul style="list-style-type: none"> Pests are not likely to become a problem on site as the site only accepts green waste. No food and catering waste is accepted on site. Monitoring for evidence of pests is carried out during the daily site perimeter inspection. The site has a strict housekeeping regime will all spillages cleaned up immediately. If a problem does develop, immediate action will be taken. If required, professional pest control contractors will be brought to site to eradicate the problem. If a particular waste is determined to be the cause of a problem it shall be removed from site at the earliest available opportunity and consideration given to mitigation measures that may be implemented before any more waste from that source is accepted on site. 	Low: the occurrence of pests on site is highly unlikely.	Nuisance	VERY LOW due to the proposed risk management techniques
Vandalism	Operator	The site could be subject to intentional vandalism and damage by intruders / trespassers who could cause	<ul style="list-style-type: none"> The site has CCTV monitoring and 24/7 security. The site is accessed via an electrical gate with an emergency code. The site is well lit and secure. All visitors to the site are required to register in the visitor's book and sign out again on exit, thereby minimising the risk of unauthorised visitors on the site. 	Low: the occurrence of vandalism taking place on site is highly unlikely.	Nuisance, Damage or Fire	VERY LOW due to the proposed risk management techniques

			damage or harm to the site or cause fires.				
Fire on site	Operator Residential Properties	/	Windborne	<ul style="list-style-type: none"> Arson by intruders is controlled via 24/7 security, CCTV and an electrical gate with an emergency code. The site is well lit and secured. Any fire would be immediately identified. The site has a regular inspection and maintenance programme which identifies any electrical or mechanical machinery faults which could result in a machinery fire. The site carries out regular temperature monitoring of the waste piles to ensure that there are no hotspots in the waste. Machinery is regularly cleaned to remove any dust, etc. Fire water is provided on site by the lagoon and a hydrant at the top of the industrial estate road. A number of fire extinguishers are placed at strategic locations around the site. The site has a strict no smoking policy. The site is operated in accordance with a dedicated Fire Prevention Plan. 	Low: the occurrence of a fire taking place on site is highly unlikely	Fire	VERY LOW due to the proposed risk management techniques and the type of waste stored on site.
Incompatible Wastes	Operator Residential Properties	/	If incorrect waste is accepted on site it could result in adverse emissions	<p>The following methods will be implemented to ensure that incompatible wastes are accepted on site:</p> <ul style="list-style-type: none"> All waste accepted onto site have been subject to 'pre-acceptance' in accordance to established procedure PGS-E01; 	Low: off site receptor impacts	Nuisance / Adverse Emissions	VERY LOW due to the proposed risk management techniques

			<ul style="list-style-type: none"> • All waste is accepted in accordance with established procedure PGS-E02; • Any non-conforming waste will be removed prior to acceptance in accordance with established procedure PGS-E03. <p>Records of incidents involving incompatible wastes will be kept on site together with a summary of the remedial action taken.</p>			
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