

Environmental Risk Assessment – TG Enviro – Biomass

Hazard	Receptor	Pathway	Risk Management Techniques	Probability of exposure	Consequence	Overall Risk
Odour	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR	Airborne	Section 4.5 of EMS Odour monitoring undertaken daily, waste types accepted should not give rise to odour issues. Drying takes place inside a building. Waste pre-acceptance and acceptance procedures, Section 3.1 and 3.2 of EMS	Potential comes from malodorous waste discovered after acceptance and left for long period of time in still weather conditions (temperature inversion). Probability will reduce with distance from the site	Nuisance - most likely for A528, T&G Group offices and T&G Quarry operations with probability reducing with distance from the site.	Low if management techniques followed.
Noise and vibration	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR	Airborne	Section 4.9 of EMS Activities likely to give rise to noise will be those operations associated with; adhoc shredding, plant/ machinery, reversing alarms from vehicles and unloading/ loading and boiler operations. Noise from road vehicles, plant/ machinery intermittent. Road vehicles are serviced and MOT in place. Plant/ machinery maintained and regularly serviced. Tree screening around building which will act as a buffer for noise attenuation. Noise assessment undertaken as part of planning application (10 th November 2016) – no issues reported.	Probable exposure from damaged exhaust causing increase in noise level from vehicles travelling to and from the site. Shredding is carried out on a campaign basis. Probability will reduce with distance from the site	Localised nuisance for T&G Group offices and quarry operations with possible effects for birds/ wildlife associated with Wood Lane Nature Reserve.	Low if management techniques followed.

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Dust	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR	Wind blown	<p>Visual dust monitoring Section 4.4 of EMS</p> <p>Activity most likely to give rise to dust will be those operations associated with the shredding of waste wood in the open.</p> <p>2 x water mist sprays and 1 x water cannon in the open storage yard.</p> <p>Site is surrounded by mature trees.</p> <p>Site roads are concrete, swept and there is a wheelwash in place prior to exiting from the site.</p> <p>Dust deposition will decrease with distance from the source.</p> <p>Air quality assessment modelling undertaken as part of the planning application, including PM₁₀.</p>	<p>Dust could possibly reach the receptors highlighted in Table 1 below, if wood stocks were excessive, shredding; wind direction and wind speed was of sufficient strength to entrain particulate matter. The nearest receptors likely to be affected are; A528, T&G Group offices, T&G Quarry operations, Wood Lane Nature Reserve boundary, Wood Lane farm, Wood Lane Cottages.</p> <p>If the wind was from the southwest (most frequent wind direction) and of sufficient strength to entrain particulate matter, then the receptor most likely to be affected is Wood Lane Nature Reserve.</p> <p>The probability of annoyance from dust will diminish with distance from the site.</p>	<p>Nuisance dust</p> <p>Dust on cars/ washing</p> <p>Dust on vegetation</p>	Low if management techniques followed.
Pests	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR	Airborne, land	<p>No food source for pests. Putrescible /food waste not accepted.</p> <p>Section 4.7 of EMS</p>	Very low probability as waste types accepted do not provide an attraction for pests.	<p>Nuisance/ annoyance</p> <p>Spread of disease and potential adverse health impacts on vulnerable</p> <p>Receptors most likely affected are A528, T&G Group offices, T&G Quarry operations.</p>	Very low if management techniques followed.

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Spillage – oil/ fuel from road vehicles and plant on site, adblue from road vehicles, waste from site escaping the boundary.	Groundwater/ surface water Land/ local soils	Percolation through ground/ surface water runoff	<p>Fuel (max. 10600 litres) is stored in the bunded fuel tank and genset next to the Biomass building. Area is secured from accidental damage by fencing (concrete posts and gravel boards with wooden panels) and Armco barrier.</p> <p>Road vehicles serviced regularly, tested and MOT.</p> <p>Plant inspected prior to use for leaks/ defects.</p> <p>Wheelwash prior to leaving site.</p> <p>Road surface is concrete.</p> <p>Surface water collection system drains to an interceptor. Visually checked for contamination.</p> <p>No discharge of water from the site. Surface water is recycled into the wheelwash.</p> <p>Spillage procedure and toolbox talk training in place.</p> <p>Spill kits available in the garage and MRF for small scale spills (such as hydraulic hoses slitting).</p>	Low probability of spillage. Spillage most likely during loading of vehicles, from damaged road vehicles, mobile plant (hydraulic leaks and refuelling from mobile fuel bowser) and from filling 10000 litre fuel tank for the genset.	Spillage of waste sticking to road vehicles and tracking off site and been deposited on the public road. Fuel/ hydraulic/ oil leaks flowing into surface water drainage system.	Low if management techniques followed.

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Fire	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR Groundwater/ surface water Land/ local soils	Airborne	Section 4.8 of EMS Fire Prevention Plan	Fire could potentially be a problem for A528, T&G Group offices, T&G Quarry operations and non-hazardous waste management operations. Residential properties could be affected if the wind was blowing from the Southeast, South-southeast, West, North, West-southwest and Southwest.	Temporary closure of A528 Nuisance Deposits on cars/ washing.	Low if management techniques followed.
Fire water	SSSI, RAMSAR, LNR Groundwater/ surface water Land/ local soils	Percolation through ground/ surface water	Section 2.7 & 4.8 of EMS Fire Prevention Plan Section 14 Waste pre-acceptance and inspection procedure (Section 3.1 and 3.2 of EMS).	Fire fighting technique chosen by the Fire Brigade would influence the amount of fire water generated. Low fire water generating techniques preferred.	Localised contamination of surface. If not cleaned up, then could lead to contamination of groundwater.	Low if management techniques followed.
Mud	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR	Airborne Percolation	Section 4.3 of EMS Regular road sweeping Long haul road Wheelwash Vehicles not to track through waste stocks Site roads are concrete running surface.	Mud only realistically possible if excessive vehicle movements during wet conditions and combined with Quarry and Inert traffic. Deposit on the A528 which then has the potential to wash off into a surface water drainage system.	Increase in suspended solids from surface water discharge which if enters surface water could cause localised impact on wildlife. Due to potential for very small volumes of mud produced consequences would be localised and minimal.	Low if management techniques followed.
Receipt of waste	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR	Airborne Percolation	Waste pre-acceptance and acceptance procedures, Section 3.1 and 3.2 of EMS Non-hazardous waste only	Waste will be accepted daily. Only hazard will be from non-conforming wastes or non-specified waste on non-impermeable surfaces.	Discharge of contaminated water/ liquid to ground and surface water.	Low if management techniques followed.

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Storage of waste	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR Land/ local soils	Airborne Percolation	Section 2.7, 2.8 and 3.3 of EMS Waste pre-acceptance procedure. Non-hazardous waste only accepted. Wastes stored on impermeable surface Fire Prevention Plan separation distances, Section 8	Low probability of waste material leaving the site. Storage should not pose an environmental issue. See Dust above and section 4.4 of the EMS.	Any free liquids would be collected in the surface water drainage system with oil interceptor.	Low if management techniques followed.
Overfilling of vessels	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR Land/ local soils Groundwater	Airborne Percolation	Bunded fuel storage tank for genset. Mobile plant and static plant filled up with mobile bowser. Bowser is double bunded. Spill kit available in the garage and MRF for oil, hydraulic and coolant leaks. Larger leaks would be contained using sand. Overfilling of mobile plant. Fuel handle has cut off. See section 4.1 of EMS	Will only occur when delivery of fuel to the mobile/ static plant.	Free flowing liquid could enter the surface water drainage system. This system is fitted with an oil interceptor.	Low if management techniques followed.
Failure of containment	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR Land/ local soils Groundwater	Airborne Percolation	Section 2.3, 2.7, 3.1, 3.2, 4.1 of EMS. Spill kit available in the store shed for oil, hydraulic and coolant leaks. Larger leaks would be contained using sand.	Greatest risk will be from the failure of the bunded fuel tank and hydraulic hoses on mobile plant.	Free flowing liquid could enter the surface water drainage system. This system is fitted with an oil interceptor.	Low if management techniques followed.

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Emissions from the processing plant	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR Land/ local soils	Airborne Percolation	See Section 4.2 of the EMS Inspections carried out on plant and equipment and any defects noted are reported and repairs initiated. Routine preventative maintenance and cleaning carried out. Odour Section see Section 4.5 of the EMS. Dust Section see Section 4.4 of the EMS.	Low probability of exposure	Free flowing liquid could enter the surface water drainage system. This system is fitted with an oil interceptor.	Low if management techniques followed.
Incompatible substances coming into contact	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR Land/ local soils	Airborne Percolation	Waste Acceptance procedure, Section 3.1 and 3.2 of the EMS Spillage Procedure, Section 1.1 of permit	Very low probability due to the waste types accepted.	Unwanted reaction between chemicals could give rise to; fire, spills, odours, noxious emissions affecting the immediate area.	Low if management techniques followed.
Failure of mains services	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR Land/ local soils	Airborne Percolation	Failure of mains electricity would not affect the process plant and equipment from operating and would not affect containment. Main's electricity failure would affect the lights and fire alarm system Failure of gas – no gas services are on site. Failure of water would affect the spray system used for dust suppression, water for bowser dust suppression and fire water is taken from surface water ponds available on site.	Has the potential to happen although highly unlikely.	No major effect on operations. No effects on containment.	Low if management techniques followed.

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Failure of generator	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR Land/ local soils	Airborne Percolation	Failure of onsite generated electricity would affect the process plant from operating but would not affect containment. Onsite generated electricity failure would not affect the lights and fire alarm system. Replacement generator can be used if a persistent / long term issue.	Has the potential to happen although highly unlikely.	No major effect on operations. No effects on containment.	Low if management techniques followed.
Operator error	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR Land/ local soils	Airborne Percolation	Section 1.6 of EMS Training, supervision Section 4 of Fire Prevention Plan	Potential for human error – greatest risk would be from not following the waste reception procedure and using Grade B wood. Potential for pollutant loading of stack emissions to increase.	Nuisance Dust on cars/ washing Potential for short term spike at receptors.	Low if management techniques followed.
Vandalism	Commercial properties Residential properties Public open spaces SSSI, RAMSAR, LNR Land/ local soils	Airborne Percolation/ drains	Section 2.3 of EMS CCTV, Security guards	Potential for vandalism due to nature of the site.	Loss of containment for liquids in mobile and static plant.	Low if management techniques followed

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Landfill gas migration from adjoining landfill site	Biomass building	Underground services/ geology	<p>Biomass building design has been approved by Building Control to meet the requirements of Building Regulations and has been 'signed off'. Biomass building design and operation also approved by insurers and fire brigade who were a consultee.</p> <p>Building designed with gas membrane and taped joints and sealed incoming ductwork.</p> <p>Active landfill gas management including back up flare for any issues with the generation unit.</p> <p>Routine monitoring of perimeter boreholes and gas wells.</p> <p>DSEAR risk assessment for landfill in place.</p>	Potential for uncontrolled landfill gas migration into voids/ ductwork and building services.	Creation of flammable/ explosive atmospheres, which increases the risk of fire on site.	Low if management techniques followed

Date of assessment: 16th March 2021

Date next assessment/ review due (max. 4 years): 16th March 2025

Assessor: Martin Womack

Signature: 

List of Receptors

<i>Map No.</i>	<i>Receptor</i>	<i>Distance (m)</i>	<i>Direction</i>	<i>Type</i>	<i>At Risk?</i>
1	T&G Quarry Operations	60	NW	Commercial	Workers, Public, Contractors
2	Wood Lane Nature Reserve boundary	73	NE	Public	Workers, Public, Contractors
3	T&G Group offices	90	WNW	Commercial	Workers, Public, Contractors
4	A528	141	SW	Public	Workers, Public, Contractors
5	Wood Lane Farm	413	NW	Residential	Workers, Public, Contractors
6	Wood Lane Nature Reserve car park	414	NE	Public	Workers, Public, Contractors
7	Wood Lane Cottages	553	NW	Residential	Workers, Public, Contractors
8	Residential Properties on A528	568	NNW	Residential	Workers, Public, Contractors
9	Whitemere (SSSI & RAMSAR) - Midland Meres & Mosses Phase 1	579	NW	Public	Workers, Public, Contractors
10	Colemere Farm and Mast	658	S	Residential	Workers, Public, Contractors
11	Colemere Farm	753	ENE	Residential	Workers, Public, Contractors
12	The White House	811	E	Residential	Workers, Public, Contractors
13	Baysil Wood Fen	820	NE	Public	Workers, Public, Contractors
14	The Birches	820	NE	Residential	Workers, Public, Contractors
15	Colemere near Shropshire Union Canal	850	NNE	Public	Workers, Public, Contractors
16	Colemere House	911	E	Residential	Workers, Public, Contractors
17	The Pump House	924	ENE	Residential	Workers, Public, Contractors
18	Colemere	957	E	Residential	Workers, Public, Contractors
19	The Lime Kiln Keepers Cottage	966	ENE	Residential	Workers, Public, Contractors
20	Spunhill Farm	986	NW	Residential	Workers, Public, Contractors