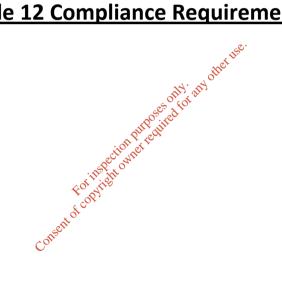


Further Information to fulfil

Article 12 Compliance Requirements



<u>Index</u>

Article 12 Compliance Requirements

- <u>Appendix 1</u>: Drawing No. 061-306-037-P2 specifying the area of the site and the proposed facility building.
- <u>Appendix 2</u>: Tables E.1(ii), E.1(iii) and E.1(i) detailing emissions to atmosphere from emission points and supplementary information for associated equipment.
- <u>Appendix 3</u>: Table E.5(i) for Noise emissions (requested table to be completed by Kees for CHP units)
- <u>Appendix 4</u>: Table F.1 for abatement/treatment control for all emission points
- <u>Appendix 5</u>: Details of measures proposed to prevent leachate/condensate emissions to ground.
- <u>Appendix 6</u>: Details of the documents considered in determining that Best Available Techniques is being proposed.
 <u>Appendix 7</u>: Financial commitments or liabilities of the documents o
- Appendix 7: Financial commitments or liabilities

Drawing No. 061-306-037-P2 specifying the area of the site and the proposed facility building is attached. The site area is 2.424Ha (8.460Acres). The existing building is 4609m² and the proposed facility building is 10,365m².

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Best available emissions data for all emissions points are provided hereunder in the relevant tables.

SCRUBBER/BIOFILTER EMISSIONS

The facility is designed to be fully enclosed with negative air pressure in the building. Apart from the AD tunnels, all air extracted from the facility will be discharged via the biofilter emission point. In order to optimise energy efficiency the air used in the fully enclosed composting tunnels(invessel units) will be sourced from within the building and any excess building air will be vented to the biofilter system. The technology used in the composting process is consistent with BAT and minimises the risk of forming odorous compounds at source. The air from the in-vessel units will be treated in an acid scrubber to reduce potential odorous compounds and particulate matter followed by humidification to ensure optimum conditions are provided for the biofilter where the air from the entire facility is treated further prior to discharge. The estimated data quoted in Table E.1(iii) prior to treatment refers to the potential concentrations from the in-vessel units prior to scrubber treatment. The pre-treatment emissions from the general building area will be significantly lower than those quoted.

TABLE E.1(ii) MAIN EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point Ref. N ^o :	A2-1
Source of Emission:	Biofilter
Location :	North East corner of facility
Grid Ref. (12 digit, 6E,6N):	
Vent Details	Biofilter surface
Diameter:	N/A
Height above Ground(m):	1.8m
Date of commencement:	Subject to Licence approval and project completion

Characteristics of Emission :

Characteristics of Emissic	on :	Metuse.	
(i) Volume to be er	nitted:	Ses officially and	
Average/day	2400000 m ³ /d	Nut Maximum/day	2640000m ³ /d
Maximum rate/hour	2 x 55,000 m 7 h	Min efflux velocity	m.sec ⁻¹
(ii) Other factors	sentoror		
Temperature	50°C(max)	5 °C(min)	45°C(avg)
For Combustion Sources	s:		
Volume terms expresse	d as : 🛛 🗆 wet.	□ dry	%O ₂

Period or periods during which emissions are made, or are to be made, including daily or (iii) seasonal variations (start-up /shutdown to be included):

Periods of Emission (avg)	<u> 60 </u> min/hr <u> 24 </u> hr/day <u> 365</u>
	day/yr

TABLE E.1(iii): MAIN EMISSIONS TO ATMOSPHERE -

Chemical characteristics of the emission

(1 table per emission point)

Emission Point Reference Number: <u>A2-1(Biofilter)</u>

Parameter	Prior to treatment ⁽¹⁾			Brief	As discharged ⁽¹⁾						
	mg/Nn	m ³	kg	/h	description	mg	/Nm ³	kg/h.		kg/year	
	Avg	Max	Avg	Max	of treatment	Avg	Max	Avg	Max	Avg	Max
<u>Ammonia</u> <u>Mercaptans</u> <u>Hydrogen Sulphide</u>	<150 - -	<300 - -			Acid scrubber in series with humidifier posand biofilter For inspection purposed	<5ppm(v/v)	<50 <5ppm(v/v) <5ppm(v/v)				
<u>VOCs</u> Dust	<40 -	<80 -			Consent of	<25 <2.5	<50 10				

EMISSIONS FROM CHP UNITS

The facility will be supplied with two spark ignition stationary internal combustion engine, cogeneration units designed specifically to generate both electrical and heat energy from biogas. These combined heat and power units are more efficient alternatives to traditional mains power systems and boilers. Compared with the generation of electricity in a thermal power station and the production of heat with a boiler, the simultaneous generation of electricity and heat in a cogeneration plant equipped with a Guascor engine reduces energy consumption by approximately one third. As the fuel source is generated and consumed on site, emissions that would be produced transporting fuel to site are prevented. Based on the total useful energy generated, emissions produced by a thermal power plant and a boiler are almost double those released by a Guascor gas engine-operated cogeneration plant. Guascor is certified to ISO9001 quality standard and to ISO14001 environmental management standard.

The biogas supplied to the CHP units will be pre-treated (desulphurisation and cooling) to ensure the gas is purified and dry and any residual inorganics will be completely oxidised by the CHP units prior to discharge. The exhaust emissions from the Guascor units meet the TA Luft emission limits , mal for stationary internal combustion engines with a rated thermal input of less than 3MW using biogas as a fuel source.

Supplementary supplier information is attached.

TABLE E.1(ii) EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point Ref. №:	A2-2
Source of Emission:	CHP Unit(SFGLD 240)
Location :	South East corner of facility
Grid Ref. (12 digit, 6E,6N):	
Vent Details	
Diameter:	200mm
Height above Ground(m):	5m
Date of commencement:	Subject to Licence approval and project completion

Characteristics of Emission :

Characteristics of Emissic	on :	Meruse.	
(i) Volume to be er	nitted:	ases of hy any	
Average/day	39054 m ³ /d	Put Maximum/day	40752m ³ /d
Maximum rate/hour	1698m 2 h	Min efflux velocity	m.sec ⁻¹
(ii) Other factors	sent of cor		
Temperature	495°C(max)	300°C(min)	377°C(avg)
For Combustion Sources	s:		
Volume terms expresse	d as : wet.	emissions corrected t	o 5% O ₂

(iii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (start-up /shutdown to be included):

Periods of Emission (avg)	<u> 60 min/hr 24 </u> hr/day <u> 365</u>
	day/yr

TABLE E.1(iii): EMISSIONS TO ATMOSPHERE-

Chemical characteristics of the emission

(1 table per emission point)

Emission Point Reference Number: A2-2 (CHP Unit SFGLD 240)

Parameter	Prior to treatment ⁽¹⁾		Brief	As discharged ⁽¹⁾							
	mg/Nm	n ³	kg	;/h	description	mg/	Nm ³	kį	g/h.	kg,	/year
	Avg	Max	Avg	Max	of treatment	Avg	Max	Avg	Max	Avg	Max
<u>NOx</u> <u>CO</u> <u>NMHC</u> <u>SOx</u>	-				High energy efficiency spark ignition internat combustion of engine (<3MW) with heat recovery using purified biogas as a fuel source.	<300	<500 <800 <300 <300	<1 <1.5 <1 <1	<1 <1.5 <1 <1	<6818 <10908 <4090 <4090	<7438 <11900 <4462 <4462

TABLE E.1(ii) EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point Ref. N ^o :	A2-3
Source of Emission:	CHP Unit(SFGLD 360)
Location :	South East corner of facility
Grid Ref. (12 digit, 6E,6N):	
Vent Details	
Diameter:	300mm
Height above Ground(m):	5m
Date of commencement:	Subject to Licence approval and project completion

Characteristics of Emission :

Characteristics of Emissic	on :	Meruse.	
(i) Volume to be er	nitted:	onth' and	
Average/day	59570m ³ /d	Maximum/day	62160m ³ /d
Maximum rate/hour	2590m ³ /h	Min efflux velocity	m.sec ⁻¹
(ii) Other factors	sentofcor		
Temperature	474°C(max)	298°C(min)	372°C(avg)
For Combustion Sources	5:		
Volume terms expresse	d as : wet.	emissions corrected t	o 5% O ₂

(iii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (start-up /shutdown to be included):

Periods of Emission (avg)	<u> 60 </u> min/hr <u> 24 </u> hr/day <u> 365</u>
	day/yr

TABLE E.1(iii): EMISSIONS TO ATMOSPHERE-

Chemical characteristics of the emission

(1 table per emission point)

Emission Point Reference Number: A2-3(CHP Unit SFGLD 360)

Parameter	Prior to treatment ⁽¹⁾		Brief	Brief As discharged ⁽¹⁾							
	mg/Nm	n ³	kg	/h	description	mg/	Nm ³	k	g/h.	kg	/year
	Avg	Max	Avg	Max	of treatment	Avg	Max	Avg	Max	Avg	Max
<u>NOx</u> <u>CO</u> <u>NMHC</u> <u>SOx</u>	-				High energy efficiency spark ignition internat combustion of engine (<3MW) with the t recovery using purified biogas as a fuel source.	<500 <800 <300	<500 <800 <300 <300	<1.5 <2.1 <1 <1	<1.5 <2.1 <1 <1	<10400 <16650 <6240 <6420	<11340 <18150 <6807 <6807

Back-up Boiler Emissions

It is anticipated that the boiler system will be used during start-up of the facility to provide supplementary heat for the process until such time as sufficient heat energy is produced from the CHP units. It is anticipated the facility and the CHP units will be at full capacity within 3 months. The boiler will be used as a back-up system thereafter and it will only be used intermittently. For the purposes of mass emissions per annum, the calculations are based on using light oil and it will be assumed the boiler is operational for 100 days in the first year and 50 days thereafter. Calculations presented are based on manufacturer supplied mass emission data for year 1 at maximum output.

Supplementary supplier information is attached.

TABLE E.1(iv): EMISSIONS TO ATMOSPHERE - Minor /Fugitive only offer any offer set of any offer set offer set of any offer set							
Emission point	Description	There	Emission	details ¹		Abatement system employed	
Reference Numbers		ntof	mg/Nm ³⁽²)	kg/h.	kg/year		
A2-4	Back-up boiler unit	ര്		<0.0019	<4.56		
		NOx		<0.018	<43.2		
		СхНу		<0.0009	<2.16		

CHP Bypass Emissions

In the event of failure of both the primary and secondary CHP units there are several backup options designed into the system. Surplus gas storage capacity is available and the back-up boiler will be capable of using biogas as a fuel source. A bypass stack fitted with a C-Deg HTC enclosed flare will be automatically activated in the event of a bypass. The unit is designed to meet TA Luft specifications with combustion temperatures greater than or equal to 1000 degrees Celcius with a 0.3 second retention time. Further supplier details are attached. The emissions will also meet the limits for flares from landfill gas as indicated in the EPA BAT draft guidance note.

Supplementary Supplier information is attached.

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TABLE E.1(i) POTENTIAL EMISSIONS TO ATMOSPHERE

Emission Point: CHP Bypass Emission point

Emission Point Ref. Nº:	A2-5
Location :	South east of facility building
Grid Ref. (12 digit, 6E,6N):	
Vent Details	
Diameter:	1300mm 9m
Height above Ground(m):	
Date of commencement of emission:	Subject to EPA Licence approval and project completion

			any other use.	
Characteristics of Emission	۱:	es only.	any	
СО	on Purpe	hite		<50mg/m ³
Total organic carbon (TOC				<20mg/m ³
NOx	For the form			<150 mg/Nm ³
	sentot		0°C. 3% O ₂ (Liquid or Gas)	, 6% O ₂ (Solid Fuel)
Maximum volume of em	ission			500m ³ /hr
Temperature	1300°C	(max)	1000 °C(min)	1200°C(avg)

(i) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up/shutdown to be included*):

Periods of Emission (avg)	<u>60</u> min/hr	<u>1</u> hr/day <u>100</u> day/yr
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Table E.5(i): NOISE EMISSIONS Noise sources summary sheet

Source	Emission	Equipment	Sound Pressure ¹	Sound Pressure ¹ Octave bands (Hz)				Impulsive or	Periods					
	point Ref. No	Ref. No	dBA at reference distance	ence Sound Pressure ¹ Levels dB(unweighted) per band			tonal qualities	of Emission						
				31.5	63	125 011	. 250	500	1K	2K	4K	8K		
Enclosed CHP Unit	A2-2	SFGLD240	65 @ 10m	2	ectionnes	Poses ed							No	22hr/d
Enclosed CHP Unit	A2-3	SFGLD360	ح	Forma	en.								No	22h/d
C-Deg HTC Unit	A2-5	HTC 3.3	رمي. 66 @ 10m										No	1h/d

1. For items of plant sound power levels may be used

TABLE F.1: ABATEMENT / TREATMENT CONTROL

Emission point reference number : A2-1 (Scrubber/Humidifer/Biofilter)

Control ¹ parameter	Equipment ²	Equipment maintenance	Equipment calibration	Equipment back-up
<u>Scrubber</u> Acid dosing system	Dosing pump	As per maintenance		Critical spares as
Actu dosing system	Dosing pump	schedule	S.	required
<u>Humidifier/Biofilter</u>		As per maintenance	r I	Critical common an
Water	Water	schedule	-	Critical spares as required
supply/discharge	supply/discharge valves	ton pictor		required
Temperature	PLC/air flow control is a second seco	As per maintenance schedule	-	Critical spares as required
Pressure	PLC/pressure indicators before and after humidifier	-	As per maintenance/ calibration schedule	Critical spares as required

Control ¹ parameter	Monitoring to be carried out ³	Monitoring equipment	Monitoring equipment calibration
<u>Scrubber</u>			
Acid Dosing system	рН	pH meter	As per calibration schedule
<u>HumidifierBiofilter</u>			
Water			
supply/discharge	Water level	Level indicator	As per calibration schedule
Temperature	Temperature	PLC/Temperature probe	As per calibration schedule
Pressure	Differential Pressure	Pressure Indicators	As per calibration/maintenance schedules
		met use.	

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Emission point reference number : A2-2 (CHP Unit 1 emission point)

Control ¹ parameter	Equipment ²	Equipment maintenance	Equipment calibration	Equipment back-up
Fuel Loading	PLC/Gas storage tank level/pressure gauge		As per maintenance/calibra tion schedule	Secondary CHP Unit/Standby boiler/storage capacity/bypass vent with auto- ignition.
Internal combustion stability	Engine flywheel	As per maintenance schedule schedule tompuposes only any other use tompuposes only any other use		Secondary CHP Unit/Standby boiler/storage capacity/bypass vent with auto- ignition

	di la constante de		
	CONSERI		
Control ¹ parameter	Monitoring to be carried out ³	Monitoring equipment	Monitoring equipment calibration
Fuel Loading	Continuous monitoring of biogas levels	Storage tank level monitoring	As per calibration schedule
Internal combustion stability	Continuous stability monitoring	Frequency control system	As per calibration schedule

Emission point reference number : A2-3 (CHP Unit 2 emission point)

Control ¹ parameter	Equipment ²	Equipment maintenance	Equipment calibration	Equipment back-up
Fuel Loading	PLC/Gas storage tank level/pressure gauge		As per maintenance/calibra tion schedule	Secondary CHP Unit/Standby boiler/storage capacity/bypass vent with auto- ignition.
Internal combustion stability	Engine flywheel	As per maintenance schedule schedule tompuposes only any other us tompuposes only any other us		Secondary CHP Unit/Standby boiler/storage capacity/bypass vent with auto- ignition

	<u></u>		
	consent		
Control ¹ parameter	Monitoring to be carried out ³	Monitoring equipment	Monitoring equipment calibration
Fuel Loading	Continuous monitoring of biogas levels	Storage tank level monitoring	As per calibration schedule
Internal combustion stability	Continuous stability monitoring	Frequency control system	As per calibration schedule

Emission point reference number : <u>A2-4</u> (Stand-by boiler emission point)

Control ¹ parameter	Equipment ²	Equipment maintenance	Equipment calibration	Equipment back-up
Fuel delivery	Fuel delivery valve/ thermostatic controller	As per maintenance schedule	As per calibration schedule	Critical spares as required
Air supply	Air damper controlled by a servomotor	As per maintenance schedule	- -	Critical spares as required

Softy. and					
Control ¹ parameter	Monitoring to be carried Roo out ³	i ^{yed} Monitoring equipment	Monitoring equipment calibration		
Fuel delivery	Continuous temperature when in use 4 ^{od} 7 ^{ite}	Thermostatic controller	As per calibration schedule		
Air Supply	Continuous temperature when in use which regulates required air supply	Thermostatic controller	As per calibration schedule		

Emission point reference number : <u>A2-5</u> (Bypass Stack potential emission point(flare))

Control ¹ parameter	Equipment ²	Equipment maintenance	Equipment calibration	Equipment back-up
Automatic ignition	External stop/start signal or internal pressure switch	As per maintenance schedule	-	Critical spares as required
Automatic Temperature/ Pressure regulation	PID Hardware controller/Air louvres	As per maintenance schedule	- *	Critical spares as required
SPectrate.				

•	· V · W		
Control ¹	Monitoring to be carried	Monitoring equipment	Monitoring equipment
parameter	5 400		calibration
Automatic ignition	Construction Continuous monitoring of biogas levels	Storage tank level monitoring	As per calibration schedule
Automatic Temperature/ Pressure regulation	Flow pressure	Pressure indicator/temperature switch	As per calibration schedule

Emission point reference number : SW1 (stormwater Discharge) SW1 (stormwater

Control ¹ parameter	Equipment ²	Equipment maintenance	Equipment calibration	Equipment back-up
Flow	Attenuation Cells / Hydrobrake	Cell Maintenance via access chambers & flush through Hydrobrake Maintenance via Access Chamber		High Level Emergency overflow provided in the event of excessive debris blocking outlet / cells
Hydrocarbon Interceptor level	Oil level alarm	As per other the second schedule for a schedule for		Critical spares as required
: trapectrowne.				

Control ¹ parameter	Monitoring to be carried	Monitoring equipment	Monitoring equipment calibration
Flow	Conser Regular visual inspection	Visual inspection	-
Hydrocarbon Interceptor level	Regular visual inspection	Visual inspection	-

¹ List the operating parameters of the treatment / abatement system which control its function.

² List the equipment necessary for the proper function of the abatement / treatment system.

³ List the monitoring of the control parameter to be carried out.

Emission point reference number : <u>SE1 (Foul sewer discharge from Envirocare</u> <u>treatment plant)</u>

Control ¹ parameter	Equipment ²	Equipment maintenance	Equipment calibration	Equipment back-up	
Solids separation	10mm partial screen	None	-	-	
BOD reduction	Biological filter for biomass	None	-	-	
			.		
	Level of all the second s				

Control ¹ parameter	Monitoring to be carried out ³	on Wonitoring equipment	Monitoring equipment calibration
Solids separation	Suspended solids in effluent	Sampling chamber	-
BOD reduction	BOD(5 day)	Sampling Chamber	-

¹ List the operating parameters of the treatment / abatement system which control its function.

² List the equipment necessary for the proper function of the abatement / treatment system.

³ List the monitoring of the control parameter to be carried out.

The following measures are proposed to prevent leachate/condensate emissions to ground:

- 1. All vehicles entering and leaving the facility will be on hard standing thoroughfares with stormwater drainage and treatment system consisting of a Class 1 oil interceptor, attenuation tank and control valve.
- 2. All processing, including deliveries of feedstock and dispatches of products will take place within a full enclosed facility under negative air pressure.
- 3. All process water/leachate generated will be contained within the building in a dedicated water collection system. The water will be collected, treated to remove solids and then pumped by overhead pipes for storage in bunded enclosed water storage tanks for reuse in the process. There will be no process waste water emissions from the facility.
- 4. The internal delivery area is designed to prevent egress of feedstock and the drainage systems at vehicle entry and exit points draining into internal drainage system for reuse. The delivery area is designed with a low point collection sump for any water, which will be pumped back in above-ground pipe to the water collection system /storage tanks for reuse. There will be no process waste water emissions from the facility.
- 5. Within the enclosed facility facility, all hard standing floor areas will have a dedicated internal water collection system, which drain back to the central water collection system /storage tanks for reuse. There will be no process waste water emissions from the facility.
- 6. All processing tunnels are fully enclosed systems with dedicated sealed drainage systems to the water collection system/storage tanks for reuse within the process. There will be no process waste water emissions from the facility.
- The diesel oil fuel storage tank will be bunded to at least 110% capacity and it will be designed to prevent rain ingress into the bund. A bund management system will be implemented as part of the Environmental Management system.
- 8. The acid scrubber system will be located within the enclosed building and will be bunded to at least 110% capacity. The delivery/dispatch area for scrubber solutions is designed for spell containment.
- 9. All condensate from the humidifier, biofilter and other areas will be recirculated for reuse in the humidifier or discharged to the process drainage system for reuse in the process.
- 10. The process water storage tanks will be bunded to 110% capacity of the maximum volume of liquid to be held in the tanks. A bund management system will be implemented as part of the Environmental Management system.
- 11. Hard standing joints will be sealed and inspected regularly as part of the environmental management system.

- 12. Relevant pipes will be inspected at least every three years as part of the environmental management system.
- 13. An emergency response procedure including spill response will be implemented as part of the environmental management system.

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<u>Appendix 6</u>

The following documents were considered in determining that Best Available Techniques are being proposed:

The BREF document, "Reference Document on Best Available Techniques for the Waste Treatments Industries", published in August 2006 was considered. In particular the Generic BAT for environmental management, waste in, waste out, management systems, utilities and raw material management, storage and handling, air emission treatments waste water management, management of process generated residues, soil contamination prevention and BAT for biological treatments were all considered during the design stage and will be implemented, where feasible.

The guidance note issued by the EPA on "Best Available Techniques for the waste sector (landfill activities)" was also considered regarding energy utilization and gas management.

The "First General Administrative Regulation Pertaining the Federal Immission Control Act (Technical Instructions on Air Quality Control – *TA Luft*) of 24 July 2002" was also considered when determining technologies.



Financial Commitments or Liabilities

Greenport Environmental Ltd will be in a position to meet any financial commitments or liabilities that will be incurred in carrying on the activity to which the application relates or in consequence of ceasing to carry out that activity.

Mr Binman, a profitable company in the waste management industry for the last 16 years, is the parent company of Greenport Environmental Ltd and it will guarantee any financial commitments or liabilities. Please find attached a letter from Mr Binman's financial institution.

