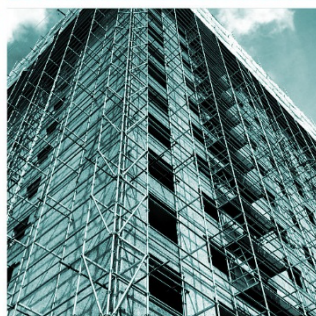
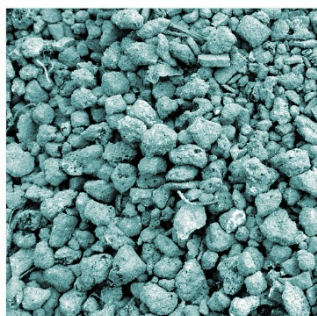
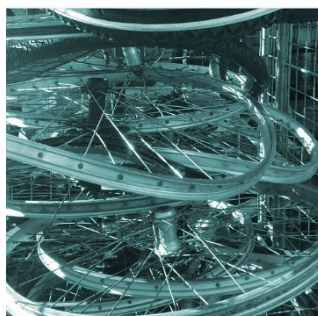
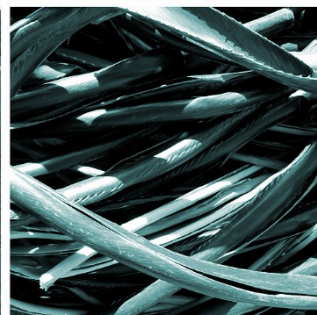
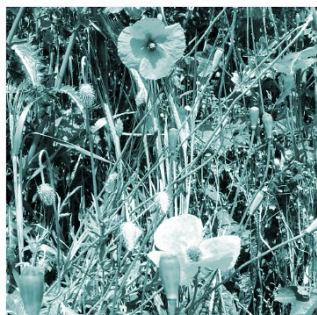


BIO DYNAMIC UK LIMITED PERMIT VARIATION APPLICATION

Point Source Emissions

July 2022



Client: Bio Dynamic UK Limited
Document Reference: HC1677-10

REPORT SCHEDULE

Operator: Bio Dynamic UK Limited

Client: Bio Dynamic UK Limited

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Document Title: Point Source Emissions

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APPROVED	
Joanna Holland	13 th August 2022

REVISION HISTORY	DATE	COMMENTS	APPROVED
Final Version 1.0	19 th August 2022	For Submission to EA	Maxwell Bagnall

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1. FORM PART C3

1.1. List of Emission Points

1.1.1. Application Form C3 Section 2 requires that all emissions to air, water and land are listed. Table 2 below provides the list of emissions as required. All emissions points referred to are shown on HC1677-06a – site layout, permit boundary and emissions point plan.

Table 2 – Emissions (releases)

Emission point reference and location	Source	Parameter	Quantity	Unit
Point source emissions to air				
Emission point reference and location	Source	Parameter	Quantity	Unit
A1-Engine Exhaust CHP Engine 1	CHP Engine 1 (pre-existing 4.93 MWth inputs Caterpillar CHP engine, 2026kW outputs)	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	<500	mg/m ³
		Sulphur Dioxide (until 31 st Dec 2029)	<350	mg/m ³
		Sulphur Dioxide (from 1 st Jan 2030)	<162	mg/m ³
		Carbon Monoxide	<1400	mg/m ³
		Total VOC's	No limit set	
A2- Engine Exhaust CHP Engine 2	CHP Engine 2 (pre-existing 1.24 MWth inputs Jenbacher CHP engine, 499kW outputs)	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	<500	mg/m ³
		Sulphur Dioxide (until 31 st Dec 2029)	<350	mg/m ³

Emission point reference and location	Source	Parameter	Quantity	Unit
		Sulphur Dioxide (from 1 st Jan 2030)	<162	mg/m ³
		Carbon Monoxide	<1400	mg/m ³
		Total VOC's	No limit set	
A3- Emergency Flare Stack 01	Emergency Flare 1 (pre-existing)	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	<150	mg/m ³
		Carbon Monoxide	<50	mg/m ³
		Total VOC's	<10	mg/m ³
A4- Emergency Flare Stack 02	Emergency Flare 2 (new)	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	<150	mg/m ³
		Carbon Monoxide	<50	mg/m ³
		Total VOC's	<10	mg/m ³
A5 – Engine Exhaust CHP Engine 3	CHP Engine 3 (new 2.955MWth inputs Caterpillar Engine, 1.25MW outputs).	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	<500	mg/m ³
		Sulphur Dioxide	<107	mg/m ³
		Carbon Monoxide	<1400	mg/m ³
		Total VOC's	No limit set	
A6- Engine Exhaust CHP Engine 4	CHP Engine 4(new 2.955MWth inputs Caterpillar Engine, 1.25Mw outputs).	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂) (NO	<500	mg/m ³

Emission point reference and location	Source	Parameter	Quantity	Unit
		and NO ₂ expressed as NO ₂)		
		Sulphur Dioxide	<107	mg/m ³
		Carbon Monoxide	<1400	mg/m ³
		Total VOC's	No limit set	
A7 - Under/over pressure relief valve on digester	Primary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
A8 – Under/over pressure relief valve on digester	Primary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
A9 – Under/over pressure relief valve on digester	Primary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
A10 – Under/over pressure relief valve on digester	Primary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
A11 – Under/over pressure relief valve on digester	Secondary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
A12 - Under/over pressure relief valve on digester	Secondary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
A13 - Under/over pressure relief valve on digester	Secondary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use

Emission point reference and location	Source	Parameter	Quantity	Unit
A14 – Exhaust stack backup dual fuel (biogas/diesel) boiler	Backup Diesel Boiler (2600kW thermal outputs and 2731kW thermal inputs).	Exhaust gases	No limit set (emergency use less than 500 hours a year)	
A15 – Odour abatement unit vent	Odour Abatement Unit	Hydrogen Sulphide	No limit set	
		Ammonia	<20	mg/m ³
		Odour Concentration	No limit set	
A16 – Under/over pressure relief valve on digester	Secondary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
A17 Under/over pressure relief valve on digester	Secondary Digester	Biogas from headspace store of the digester	Time in use – duration and frequency - to be recorded	Duration and frequency in use
A18 – Vent from tanker digestate offtake odour abatement unit	Digestate tanker removal point – displaced air from vacuum tankers	Hydrogen Sulphide	No limit set	mg/m ³
		Ammonia	<20	
		Odour Concentration	No limit set	
A19 – Vent from tank farm displaced air odour abatement unit (carbon filter)	Odour Abatement Unit	Hydrogen Sulphide	No limit set	
		Ammonia	<20	mg/m ³
		Odour Concentration	No limit set	
A20 - Dewatering system tank (MBR) pressure relief valve	Air in head space of digestate dewatering system	Odororous air	No limit set	

Emission point reference and location	Source	Parameter	Quantity	Unit
Point source emissions to water (other than sewers)				
Emission point reference and location	Source	Parameter	Quantity	Unit
W1 – Discharge point to surface water (the River Trent) from dewatering (MRP) process	Filtrate Effluent from Dewatering Process	pH	As specified in BAT 20 table 6.1	pH
		COD		mg/l
		Suspended Solids		mg/l
		Ammonia		mg/l
		Total Phosphorus		mg/l
		Pte's		mg/l
Point source emissions to sewers, effluent treatment plants, or other transfers off site				
Emission point reference and location	Source	Parameter	Quantity	Unit
None				



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