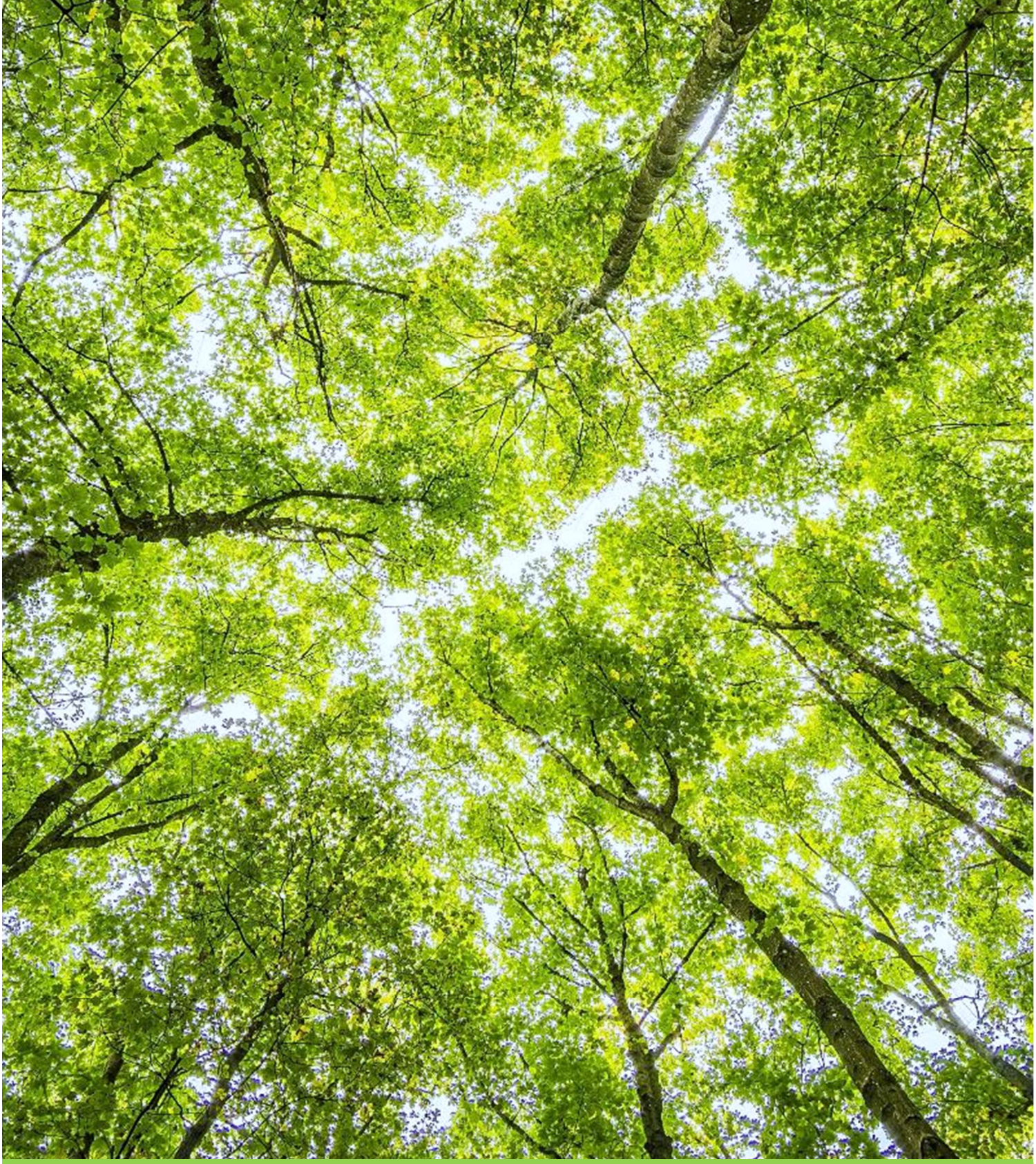

Site Condition Report

Charlton Park Biogas Ltd

Report produced for **Charlton Park Biogas Ltd**

Provided by Walker Resource Management Ltd (WRM)

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1.0 INTRODUCTIONS

Name of the applicant	Charlton Park Biogas Limited
Activity address	Charlton Park Farm, Malmesbury, Wiltshire, SN16 0HT
National grid reference	NGR ST 92795 89728

Document reference and dates for Site Condition Report at permit application and surrender	Date at application: EPR-A05 (12/08/2021)
Document references for site plans (including location and boundaries)	Site location plan: CPB Site Location Plan Site layout plan: CPB Site Layout Plan

2.0 CONDITION OF LAND AT PERMIT ISSUE

Environmental setting	Charlton Park Biogas Limited (hereon referred to as "CPB") is applying for a bespoke installation environmental permit for the operation of an Anaerobic digestion facility for the treatment of up to 50,000 tonnes per annum of waste, including the subsequent upgrading, grid injection and combustion of biogas. The proposed anaerobic digestion facility will include the following: • Site Office • Weighbridge • Intake Tanks • Buffer Tank • Polyester Silos • Silage Clamps • Solid feeders • Two digesters • CHP Unit • Biomethane Upgrading • Gas to Grid Entry • Gas Flare • Digestate Separator • Digestate Lagoons • Black Water Lagoon • White Water Infiltration Pond The facility is located off the B4014 around 1km north of the town of Malmesbury, Wiltshire and is sited within an agricultural area with some residential properties nearby. Immediately south of the site are several farm buildings and a residential farmhouse. This is the only sensitive receptor within 250m of the site boundary. See Appendix A for environmental setting maps. **Geology** The underlying geology of the proposed recycling facility is as follows: • There are two types of bedrock beneath the site (i.e. rock types far below the surface). The site is primarily underlain by the Kellaways Clay Member Formation. This is Mudstone bedrock formed approximately 165 million years ago in the Callovian Age. To the northeast of the site the bedrock is comprised of Forest Marble Mudstone and Cornbrash Formation. • There is one recorded superficial deposit beneath the entire site (i.e. rock types near the surface) known as "Sand and Gravel or Uncertain Age and Origin". **Hydrogeology** The hydrogeological features of the subsurface features of the site are:

	• The Forest Marble Bedrock Aquifer located on the northeast of the site is designated as a *Secondary A Aquifer*. • The Kellaways Clay Member bedrock is designated as an *Unproductive Aquifer.* • The Sand & Gravel Superficial Aquifer which is designated as a *Secondary A Aquifer*. <u>Groundwater</u> The groundwater characteristics for the site location are presented below: • The site is situated within *Groundwater Source Protection Zone (SPZ) I – Subsurface Activity*. This is defined as the 50-day travel time from any point below the water table to the source and where the aquifer is confined and may be impacted by deep drilling activities. • The groundwater vulnerability classification of the Kellaways Clay Member on the northern edge of the site is classified as a *Secondary A Bedrock Aquifer – High Vulnerability*. High vulnerability areas are able to easily transmit pollution to groundwater. They are characterised by high leaching soils and the absence of low permeability drift deposits. • The groundwater vulnerability of the Sand and Gravel superficial aquifer beneath the site is classified as *Secondary A Aquifer – Low Vulnerability*. Low vulnerability areas provide the greatest protection to groundwater from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits with a low permeability. • The Forest Marble Mudstone to the northeast of the site is defined as *Unproductive Vulnerability*. Areas of unproductive strata do not typically represent a risk to groundwater resources, although surface water run-off from these areas may represent a risk to surface water. • There are no licensed groundwater abstractions within 500m of the site. • The site is at high risk of groundwater flooding. <u>Flooding</u> • The site is not located within a flood risk zone according to the EA flood map for planning tool. This indicates that there is no flood risk at site. <u>Hydrology</u> • The nearest surface water feature is a pond at Quobwell Farm, located approximately 50m south of the site. There is tertiary water course that originates approximately 105m south of the site. The nearest primary water course is the River Avon, located approximately 800m west of the site. • There are no surface water abstractions within 1000m of the site.
	<u>Historical Land Use</u> A review of historical Ordnance Survey maps and information pertinent to the entire site and within a 250m radius is summarised below: 1886 • Site is Open Fields.

	• Quobwell Farm shown 0m south, comprises main buildings outbuildings and pond. • The access road is shown 0m south and along the southern boundary of the site. • A pond is shown 50m south. A band of trees is shown 30m south to 200m south. • The Copper Arms is shown 150m north. • A quarry is shown 500m north. **1900** • Site is Open Fields. • A pond is shown 200m south. **1921** • Site is Open Fields. • The quarry is shown as an old quarry. • Two terraced properties are shown to the north of The Copper Arms. **1978-1994** • Site is Open Fields. • The farm has enlarged to the west and south. • The old quarry is not shown and has been infilled. • Quobwell cottages are shown 5m north. **2002-2014** • Site is Open Fields. • No changes. Please see Appendix A for historical site maps. **Pollution Incidents** • There have been no recorded pollution incidents to controlled waters, air or land within 2km of the site. **Waste Register** • There are no operational or historical landfill sites within 500m of the site. • There are no waste treatment, transfer or management sites within 500m of the site. **Industrial Activity** • There are no new potential contaminative industrial land uses identified within 500m of the site. • There are no fuel stations within 250m of the site. • There are no oil or gas pipelines within 500m of the site. **Coal Mining Activity** • No coal mining activities have been identified within 1000m of the site. **Non-Coal Mining and Cavities**

	• No significant non-coal mining activities have been identified within 1000m of the site.
Baseline Soil and Groundwater Reference Data	A geo-environmental report was undertaken by Enzygo Geoenvironmental Limited in March 2018 (Appendix A). The objectives of the report included: • Obtain desk study information pertaining to the proposed development and the surrounding area. • Undertake a targeted ground investigation for the proposed development. • Provide a factual and interpretive report relating to the desk study and site investigations. The results of the desk-based study found that are no significant contamination risks at or near the site based upon a review of historical maps, land uses surrounding the site and the regulatory database. There was also no visual evidence of contamination on the site. Based upon the results of the desk-based study, a conceptual model is presented. This determines that the probability of exposure from contamination is *dismissed*, however there is a *negligible* risk of contamination affecting the groundwater as the site is underlain by a secondary aquifer (Appendix A, Section 6). In the absence of any evidence of contamination from the desk-based study, samples for the targeted ground investigation were collected from made ground near the surface, as this material is more likely to be contaminated by surface spillages. The samples for chemical analysis were taken from five locations around the site at depths between 0.1m – 0.2m. As no historic contamination had been encountered, each soil sample was tested for the following standard suite parameters: • CLEA Metal Suite • pH • Sulphate • Cyanide • Phenols • Speciated Polycyclic Aromatic Hydrocarbons (PAH) • Organic Carbon • Banded Total Petroleum Hydrocarbon (TPH) • Asbestos See Appendix C of Appendix A for the full results of this analysis. Based upon the results of the ground investigation, a revised conceptual model is presented. This determines that the probability of exposure from contamination remains *dismissed*, with the risk of contamination affecting groundwater reduced from *negligible* to *dismissed*. It is important to note that the risk to environmental receptors did not change as a result of soil testing and analysis and that no exceedances of the Generic Assessment

	Criteria (GAC) values for commercial usage or residential with no plant uptake were found (Appendix A, Section 9). It is therefore concluded within the report that based upon the results of the desk-based study and ground investigation, there is no contamination of soil or groundwater at the site.
Supporting Information	• SCR Enzygo Geo-Environmental Report

3.0 PERMITTED ACTIVITIES

Permitted Activities	CPB is applying for a bespoke installation environmental permit for the operation of an Anaerobic digestion facility for the treatment of up to 50,000 tonnes per annum of waste, including the subsequent upgrading, grid injection and combustion of biogas. Permitted activity will be agreed in accordance with the environmental permit issued.
Non-Permitted Activities Undertaken	There are no non-permitted activities undertaken.
Document References for: • **Plan showing activity layout** • **Historical land use maps** • **Site sensitivity maps**	Layout Plan: CPB Site Layout Plan Historical Site Maps: SCR Enzygo Geo-Environmental Report Environmental Setting Maps: SCR Enzygo Geo-Environmental Report Datasheet: SCR Enzygo Geo-Environmental Report

4.0 CHANGES TO THE ACTIVITY

To be maintained during the life of the permit

Have there been any changes to the activity boundary?	
Have there been any changes to the permitted activities?	
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	
Checklist of supporting information	• Plan showing any changes to the boundary (where relevant) • Description of the changes to the permitted activities (where relevant) • List of 'dangerous substances' used/produced by the permitted activities that were not identified in the Application Site Condition Report (where relevant)

4.1 Measures Taken to Protect Land

Use records that you collected during the life of the permit to summarise whether pollution prevention measures worked. If you can't, you need to collect land and/or groundwater data to assess whether the land has deteriorated.	
Checklist of supporting information	• Inspection records and summary of findings of inspections for all pollution prevention measures • Records of maintenance, repair and replacement of pollution prevention measures

4.2 Pollution Incidents

Summarise any pollution incidents that may have damaged the land. Describe how you investigated and remedied each one. If you can't, you need to collect land and /or groundwater reference data to assess whether the land has deteriorated while you've been there.	
Checklist of supporting information	• Records of pollution incidents that may have impacted on land • Records of their investigation and remediation

4.3 Soil Gas and Water Quality Monitoring

Provide details of any soil gas and/or water monitoring you did. Include a summary of the findings. Say whether it shows that the land deteriorated as a result of the permitted activities. If it did, outline how you investigated and remedied this.	
Checklist of supporting information	• Description of soil gas and/or water monitoring undertaken • Monitoring results (including graphs)

5.0 DECOMMISSIONING AND REMOVAL OF POLLUTION RISK

To be completed at permit surrender

Describe how the site was decommissioned. Demonstrate that all sources of pollution risk have been removed. Describe whether the decommissioning had any impact on the land. Outline how you investigated and remedied this.	
Checklist of supporting information	• Site closure plan • List of potential sources of pollution risk • Investigation and remediation reports (where relevant)

5.1 Reference Data and Remediation

Say whether you had to collect land and/or groundwater data. Or say that you didn't need to because the information from section 4 of the Surrender Site Condition Report shows that the land has not deteriorated. If you did collect land and/or groundwater reference data, summarise what this entailed, and what your data found. Say whether the data shows that the condition of the land has deteriorated, or whether the land at the site is in a "satisfactory state". If it isn't, summarise what you did to remedy this. Confirm that the land is now in a "satisfactory state" at surrender.	
Checklist of supporting information	• Land and/or groundwater data collected at application (if collected) • Land and/or groundwater data collected at surrender (where needed) • Assessment of satisfactory state • Remediation and verification reports (where undertaken)

5.2 Statement of Site Condition

Using the information from sections **4 and 5, give a statement about the condition of the land at the site. This should confirm that:**

- The permitted activities have stopped.
- Decommissioning is complete, and the pollution risk has been removed.
- The land is in a satisfactory condition.

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