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17 April 2026

Matthew Fryer
Senior Permitting Officer
Natural Resources Wales
Crown Buildings, Cathays Park
Cardiff
CF10 3NQ

Dear Matthew,

PAN-028894
Operator: Deeside SPV Limited
Facility: Arrow Bio Waste Recycling Facility, Weighbridge Road, Deeside, CH5 2LL

Thank you for your letter dated 03/03/2026. We write in response to the specific points highlighted with a view to progress the Environmental Permit (Reference PAN-028894) to Duly Made status. We appreciate the ongoing discussion and extensions afforded to enable this information to be provided to Natural Resources Wales ("NRW").

Enclosed with this submission are the following documents and to which further information is provided in the respective sections:

Document	Reference
Environmental Permit Application Document (Corrected)	ES2520-15, V2
Environmental Permit Appendices Appendix A Design and Access Statement Appendix B Waste Recovery Appendix C Waste Codes Appendix D Flood Consequence Assessment Appendix E Storage of Waste Appendix F Environmental Risk Assessment Appendix G Drainage and Flood Risk Appendix H Propane and Firewall Details Appendix I COMAH	
Simplified Process Flow Diagram	Flintshire_AD_Process_Flow_032026

MCPD Assessment and Annex 1 Information	ES2520 MCPD
WT BREF BAT Conclusions Spreadsheet (Complete)	WT BAT Conclusions
CHP Technical Datasheets (MTU 16V4000 & 12V4000)	MTU/Rolls-Royce
Air Quality Risk Assessment - Rappor Appendix A Modelling Results Appendix B Technical Datasheets	April 2026
Noise Technical Memorandum (Mike Potts MIOA)	EnviroSolution, March 2026
Feedstock Acceptance Procedure	BCNE-PROC-18
Trade Effluent and Water Discharge Technical Note	ES2520-TN01
NCS Sewer Plan Site Drainage Layout (Ref 29718-1020 Rev 0) Site Drainage Calculations (Ref 29718 Design Calculations Rev D)	
CIRIA C736 Containment Risk Assessment	March 2026
Fire Prevention and Mitigation Plan (V2 Final)	March 2026

Taking the points in your letter in turn:

1. Digestate – End Use

The Environmental Permit Application Document (ES2520-15, V1) submitted with the original application contained legacy content from a previous scheme for the site. Specifically, the document described a mixed municipal solid waste (MSW) treatment facility incorporating hydromechanical separation (MRF), multi-stage anaerobic digestion, wastewater treatment, and Refuse Derived Fuel (RDF) production — none of which form part of the current proposal.

The scheme is that of a food waste anaerobic digestion plant only, processing up to 149,000 tonnes per annum of source-segregated food waste. There is no MRF, no hydromechanical separation, no aerobic digester, no wastewater treatment plant, and no RDF production.

The facility will not process mixed MSW through a hydromechanical separation system. There is no MRF at the facility. The reference to hydromechanical separation in the original application document was legacy content from a previous development scheme and was included in error.

The facility will accept only source-segregated food waste as defined by the waste codes listed in Appendix C (List of Waste Codes, ES2502-5). All waste codes have been selected in accordance with Appendix B of the EA/WRAP Anaerobic Digestate Quality Protocol and

RPS 241. The waste types accepted comprise source-segregated biodegradable wastes from agriculture, food processing, catering, and municipal collections.

On this basis, the facility is designed to produce PAS110-compliant digestate. The pasteurisation system (3 x 32 m^3 tanks, 70°C for minimum 1 hour) is designed to meet PAS110 and Animal By-Products Regulations requirements. The operator intends to apply for PAS110 certification via a Designated Quality Protocol (DQP) assessor.

Where digestate does not meet PAS110 quality criteria, it will be managed as waste and spread under appropriate waste regulatory controls via a mobile plant landspreading permit held by a third-party contractor.

2. **Site Activities – Provision of Further Clarity in regard to the activities being applied for.**

The application is for a single Section 5.4 Part A(1)(a)(i) activity: biological treatment by anaerobic digestion. There are no other waste treatment activities at the facility:

- There is no Materials Recovery Facility (MRF) or hydromechanical separation system
- There is no aerobic digester or wastewater treatment plant.
- There is no mechanical treatment facility. The depacking system (Huning equipment) is an integral part of the AD feedstock preparation process, not a standalone mechanical treatment activity.
- There is no Refuse Derived Fuel (RDF) production.

All references to these activities in the original application were legacy content from a previous development scheme and have been removed from the corrected application document (ES2520-15, V2) enclosed herewith. The sole activity for which a permit is sought is anaerobic digestion of source-segregated food waste with biogas upgrading to biomethane for grid injection.

3 no. CHP units

A standalone MCPD Assessment document is enclosed with this response providing full Annex 1 information for all five combustion plants at the facility.

The key findings are summarised below:

Plant	Thermal Input	Fuel	MCPD?	Status	Op. Hours/yr
CHP 1 (MTU 16V4000 GS)	4.75 MWth	Biomethane	Yes	New	8,760
CHP 2 (MTU 12V4000 GS)	3.56 MWth	Biomethane	Yes	New	8,760
CHP 3 (MTU 12V4000 GS)	3.56 MWth	Biomethane	Yes	New	8,760
Boiler (Viessmann Vitoplex 200)	1.10 MWth	Natural Gas/Diesel	Yes	New	<500
Emergency Generator (D 250 GX)	~0.5 MWth	Diesel	No	N/A	<50

All three CHP units and the boiler are Medium Combustion Plants (≥1 MWth) classified as new plant. They will comply with the applicable MCPD emission limit values from the date of first operation. The emergency generator is below the 1 MWth threshold but will be assessed against Specified Generator requirements if annual operating hours exceed 50.

Rated thermal inputs are derived from the manufacturer's technical datasheets (MTU/Rolls-Royce). Full Annex 1 tables, emission compliance assessments, and aggregation considerations are provided in the enclosed MCPD Assessment document.

Aerobic Digester for Water Treatment Plant

There is no aerobic digester or wastewater treatment plant at the facility. The description of an aerobic reactor, anoxic reactor, settler and chlorination disinfection system in the original application was legacy content from a previous development scheme (the ArrowBio process) and was included in error. This content has been removed from the corrected application document.

The facility generates no process wastewater. Internal drainage from the reception building is collected in the mixing pit and recirculated within the AD process. Condensate from gas lines is returned to the digesters. Domestic sewage is discharged to a 20 m^3 cesspit. Surface water from roofs and roads is discharged to an attenuation pond via an oil interceptor.

On broader water and flood matters, it is acknowledged that appendices D and G are dated from 2018; most of the conclusions and identified mitigation measures remain appropriate

in the context of the updated development. There have been updates to planning policy since the preparation of the 2018 ES and Report, as summarised below:

• Planning Policy Wales is now at Edition 12 as of February 2024 (rather than Edition 6 of November 2016); and

• An updated Technical Advice Note 15: Development, flooding and coastal erosion was adopted in March 2025.

However, there has not been a fundamental change in the principles of planning policy. In addition, the publication of 'Flood Consequences Assessments: Climate change allowances' NRW in September 2021 requires a 40% CC allowance for rainfall in the design of surface water drainage systems, whereas the 2018 Report designed to a 20% CC allowance. The update to CC allowance guidance also impacts fluvial, tidal and surface water risks. Based on the adopted NRW Flood Map for Planning Wales – which includes CC allowances in the mapped extents – the site is demonstrated to be outside of the 1 in 1000 year plus CC fluvial and tidal extreme extents. There are two very small, isolated areas of Surface Water Flood Zones 2 and 3 within the site but these are likely relating to site topography and would no longer be present post-development through incorporation into the surface water drainage system, in line with the 2018 Report. Therefore, there would be no increase in flood risk to the proposed development or to the surrounding area, because of the current scheme.

Mechanical Treatment Facility

There is no standalone mechanical treatment facility at the site. The references to trommels, disc screens, ballistic separators, settling vats, shredders, hydro-cyclones, magnets, eddy currents and wind sifters in the original application described the ArrowBio hydromechanical separation process, which does not form part of the current proposal.

The facility does include a depacking system (Huning SBCK pusher plate, disintegration rollers, HTZ-3-1120 separating crusher, screw conveyors, Optimatic hammermill, and SFC feeding system) which removes packaging from incoming food waste prior to AD. This is an integral part of the AD feedstock preparation process and is not considered a separate mechanical treatment activity requiring its own permitted activity reference.

Refuse Derived Fuel Production

There is no RDF production at the facility. All references to RDF halls, RDF storage, RDF production processes, and associated NCV/calorific value benchmarks in the original application were legacy content from a previous development scheme. This content has been removed from the corrected application document.

The only solid output from the facility is digestate (whole, liquid or separated solid fractions) which will be managed as described in Point 1 above. Packaging waste separated by the depacking system is dispatched from site for recycling or energy recovery at appropriately permitted third-party facilities.

3. Process Flow Diagram

A corrected simplified process flow diagram (Flintshire_AD_Process_Flow_032026.doc) is enclosed. This accurately represents the facility as proposed and shows:

- Step 1: Waste reception and depacking
- Step 2: Heated pre-storage (2 x 628 m^3 tank)
- Step 3: Quarantine Tanks (2 x 100m^3)
- Step 4: Primary digestion (3 x 5,213 m^3 fermenters)
- Step 4a: Post-digestion (1 x 5,213 m^3 post-fermenter)
- Step 5: Pasteurisation (4 x 32 m^3 tanks, 70°C / 1 hour)
- Step 6: Digestate storage (2 x 8,040 m^3 tanks)
- Step 7: Biogas treatment (gas cooling, carbon cleaning, ammonia washing)
- Step 8: Biogas upgrading (DMT) to biomethane for grid injection
- Step 9: CO_2 recovery, storage and off-site distribution
- Step 10: Digestate separation (optional)
- Parallel: 3 x CHP engines for site electricity and heat; emergency flare; dual-fuel boiler

The corrected Environmental Permit Application Document (ES2520-15, V2) also contains a full written description of each process stage

4. Waste Code List

The waste code list (Appendix C, ES2502-5) is for the anaerobic digestion process only. There is no MRF and no RDF production, so separate waste code lists are not required.

The waste codes have been selected in accordance with Appendix B of the EA/WRAP Anaerobic Digestate Quality Protocol and prepared with reference to RPS 241 (99 codes replaced with compliant alternatives as detailed in Appendix 1 of the waste codes document). All wastes accepted will be source-segregated biodegradable wastes suitable for PAS110-compliant AD. The reference to ‘diapers’ and other non-compliant waste appearing in Figure 1.1 of the original application was part of the ArrowBio legacy content describing a mixed MSW process. This does not reflect the current proposal and has been removed from the corrected application document.

5. Waste pre-acceptance and acceptance procedures, waste storage procedures

The following documents are provided in support of this point:

- Appendix E – Storage of Waste Description (Bioconstruct Waste Management Plan). This document details waste acceptance procedures (pre-booking, weighbridge checks, Duty of Care documentation, visual inspection), waste rejection procedures (quarantine area, 48-hour maximum, NRW notification), storage arrangements (all waste inside on impermeable surfacing with sealed drainage, processed within 48 hours), maximum stockpile heights (4 m) and widths (20 m), combustible waste storage times, and the quarantine area specification.
- The corrected Environmental Permit Application Document (ES2520-15, V2) contains full descriptions of waste pre-acceptance, acceptance and storage procedures in the 'In-Process Controls' section.
- The BAT Assessment (Appendix 14 of the BAT submission) addresses waste acceptance, tracking, and storage under BAT 2, BAT 4, and BAT 5.

A site layout plan showing the reception building, tank farm, bund area, and stockpile locations has been provided as part of the Design and Access Statement (Appendix A) and associated DAY Architectural drawings. The waste stockpile is located within the enclosed reception building only — there is no external waste storage

6. Noise Impact Assessment

A preliminary Noise Technical Memorandum has been prepared by Mike Potts MIOA of EnviroSolution (dated 26 March 2026) and is enclosed with this response. Mr Potts is a Member of the Institute of Acoustics with over 25 years' experience in environmental noise assessment.

The Technical Memorandum provides a desk-based screening assessment which demonstrates that, with all three CHP units operating concurrently within sound-attenuating enclosures (specified to achieve approximately 60 dB LAeq at 1 m), the predicted sound pressure level at the nearest noise-sensitive receptors (2 km) would be below 0 dB — entirely inaudible. The assessment identifies no other significant external noise sources, with the majority of process equipment housed within buildings. The memo notes the importance of specifying CHP enclosures to mitigate low frequency noise propagation under specific meteorological conditions.

Given the significant separation distance (minimum 2 km to nearest residential receptor), the heavily industrialised context of the site, and the screening effect of intervening industrial buildings, we consider that the enclosed Technical Memorandum provides robust evidence that operational noise impacts will be negligible. However, if NRW requires a full BS 4142:2014+A1:2019 assessment with measured background sound levels and formal rating level calculations, the operator will commission a baseline noise survey and

provide the full assessment and modelling files within 4 weeks of confirmation from NRW that this is required.

7. Air Quality and Air Quality Impact Assessment

An Air Quality Assessment ("AQA") has been undertaken by Rappor (dated April 2026). Dispersion modelling of on-site combustion processes at the facility was undertaken using ADMS 6. Impacts at sensitive receptors were quantified and the results compared with the relevant EQSs and significance criteria provided by the NRW. Predicted impacts were based on the proposed operating procedures for the facility.

Impacts were based on the facility emitting the maximum permitted pollutant concentrations, as well as the use of the maximum predicted concentrations over five assessment years. As such, predicted concentrations are considered to represent a robust assessment.

Based on the predictions and the use of conservative assumptions, including worst-case emission limit values and meteorological conditions over a five-year period, the overall air quality impacts of the Facility are considered to be negligible and acceptable.

8. Copy of AQA modelling files and any raw meteorological data used in the model

These are provided at Appendix A (Modelling Results) and Appendix B (Technical Datasheets) of the Rappor Air Quality Assessment dated April 2026.

9. Containment

The main treatment and storage infrastructure is contained within an impermeable concrete bund designed in accordance with CIRIA C736 – Containment Systems for the Prevention of Pollution. The bund provides a capacity of 9,408 m^3, sized to accommodate 110% of the largest vessel volume. The containment system includes reinforced concrete retaining walls (minimum 2.1 m height including 250 mm freeboard), impermeable base slab, Bentomat liner, Radar Gas Barrier, floodgate (MM Engineered Solutions, 70-year design life), and bund sump with SCADA high-level alarm. No pipes, ducts or cables penetrate the bund floor or walls.

A formal CIRIA C736 Containment Risk Assessment (dated 1 March 2026, prepared by Darren Smith) is enclosed with this response. The assessment follows the C736 methodology, evaluating primary containment (tanks, pipework, storage containers), secondary containment (bunded areas, impermeable hardstanding, interceptor-protected drainage), and operational controls (delivery procedures, spill response, inspections). A

structured source-pathway-receptor analysis identifies potential pollution sources (fuel storage, chemical storage, digestate tanks, IBCs, transfer operations) and environmental receptors (surface water drains, groundwater, nearby watercourses, soil). The compliance assessment confirms that secondary containment capacity meets the ≥110% largest container / 25% total volume requirement, bund construction is impermeable, drainage isolation valves are installed, and spill response equipment is available. The residual environmental risk is assessed as low to medium. An improvement actions programme has been identified including enhancements to inspection regimes and staff training, with target dates to be confirmed prior to commissioning.

10. Trade Effluent Consent

The references to wastewater treatment and effluent discharge in the original application were legacy content from the previous ArrowBio scheme.

The drainage arrangements for the facility are as follows:

- Process water: All internal drainage from the reception building is collected in the mixing pit and recirculated within the AD process. Condensate from gas lines and the upgrading process is returned to the digesters. There is no process water discharge to sewer.
- Domestic sewage: Connection to existing on site foul sewer.
- Surface water (bund): Accumulates in the bund sump, tested against benchmark thresholds in the on-site laboratory, and released to the site surface water system only if thresholds are met. Discharged via oil interceptor to a lined attenuation pond outside the permitted area.
- Surface water (roofs and roads): Discharged via oil interceptor to the attenuation pond. An overflow from the pond connects to an external sewer.

A s106 application has been submitted to Dwr Cymru for a new connection to the existing sewer network; this is currently being determined. Enclosed with this letter are copies of the detail as submitted with the application, namely NCS Sewer Plan, Site Drainage Layout (Ref 29718-1020 Rev 0) and Site Drainage Calculations (Ref 29718 Design Calculations Rev D)

11. BAT Assessment

A completed WT BREF BAT Conclusions spreadsheet is enclosed. This covers all 53 BAT Conclusions from the Waste Treatment Best Available Techniques Reference Document, with 322 out of 322 rows populated.

BAT Conclusions 1–24, 33–35 and 38 are applicable to this anaerobic digestion facility and have been completed with specific techniques, evidence references, and compliance

dates. BAT Conclusions 25–32, 36–37 and 39–53 relate to waste treatment activities not undertaken at this facility (mechanical treatment, waste oil re-refining, solvent regeneration, contaminated soil treatment, liquid waste treatment) and are marked as not applicable.

As confirmed in Point 2 above, the facility undertakes a single waste treatment activity (anaerobic digestion). Additional BAT Assessments for other activities are therefore not required.

12. Fire Prevention and Mitigation Plan

A comprehensive revised Fire Prevention and Mitigation Plan (V2 Final, March 2026) has been prepared in accordance with NRW's 'Fire prevention and mitigation plans' guidance and is enclosed with this response. The plan comprises 18 sections covering all elements required by NRW's guidance:

The 18-section plan addresses the following key areas:

- Fire risk assessment identifying principal hazards (waste self-combustion, biogas ignition, electrical faults, lithium battery contamination, hot works), receptors, and risk ratings (Section 3)
- Fire prevention measures including waste acceptance controls, hot load rejection, storage and segregation with fire breaks, housekeeping, process controls with SCADA temperature monitoring, and hot works permits (Sections 4–5)
- Fire detection systems including automatic heat and smoke detection, methane and H_2S gas detection, alarm and notification systems integrated with SCADA (Section 5)
- Fire suppression systems including fixed suppression in the reception hall, portable extinguishers (CO_2 for electrical, foam/water for solid waste), and biogas-specific suppression measures (Section 6)
- Firefighting strategy including emergency access for North Wales Fire and Rescue Service, fire breaks, separation distances, tactical firefighting approach, roles and responsibilities, and NRW notification procedures (Section 7)
- Water supply for firefighting including dedicated on-site fire water storage (500–1,000 m^3 design capacity), fire hydrant connections, backup supply arrangements, and fire water containment within the sealed drainage system with isolation valves (Sections 8–9)
- Quarantine area for hot loads and fire-affected waste on impermeable hardstanding with drainage connection to the fire water containment system (Section 10)
- AD-specific biogas fire and explosion risk management including ATEX hazardous area classification, gas detection, emergency shutdown and gas isolation, pressure relief and flaring, and ignition source control (Section 16)

The plan also addresses management of common fire causes (Section 11), emergency response procedures before, during and after a fire (Sections 12–14), training and

competence (Section 15), and review and audit arrangements (Section 17). A compliance statement confirms alignment with NRW's FPMP guidance and WISH Waste Fire Risk principles (Section 18).

13. Technical Competency

The facility undertakes anaerobic digestion only. The appropriate primary competence is CIWM WAMITAB Level 4 Medium Risk Operator Competence for Anaerobic Digestion (MROC5). There is no requirement for MRF or aerobic digestion competencies as these activities are not undertaken at the facility.

The operator is arranging for Darren Smith's continuing competency to be renewed (the enclosed Continuing Competence Certificate Expiring 05/12/2027) and will provide the relevant updated certification to NRW in due course.

Yours sincerely

Deloitte LLP