Nutrient Neutrality Assessment
Site: 96 Erddig Road, Wrexham
Proposal: Conversion to 1 × 2-bed apartment and 1 × 1-bed apartment
Applicant: Shaun Myddelton
Planning Ref: P/2025/0607
Date: 7 October 2025

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1) Purpose & approach

This statement assesses the nutrient implications of converting the existing 5-bed dwelling into one 2-bed and one 1-bed apartment.
The assessment uses the same **Flows & Loads 4** and **Building Regulations Part G** methodology that was previously accepted by Natural Resources Wales (NRW) for an earlier scheme at this address.

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2) Drainage & receiving works

- **Connection:** Public foul sewer (no private treatment).
- **Receiving works: Five Fords Wastewater Treatment Works (WwTW)**, operating under Environmental Permit.

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3) Population equivalents (Flows & Loads 4)

Per **British Water Flows & Loads 4**:

- 5-bed house = **7 persons (P)** (5 P for the first 3 bedrooms + 1 P per additional bedroom).
- 2-bed flat = **4 P**
- 1-bed flat = **3 P**
  → **Total proposed = 7 P**, matching the lawful baseline.

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4) Water-use assumptions

- **Existing lawful use:** 150 L/person/day (Flows & Loads standard).
- **Proposed (conversion):** 125 L/person/day (Part G – material change of use).

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5) Flow calculations

Scenario	Occupants (P)	Rate (L/person/day)	Total Flow (L/day)
Existing lawful use (5-bed house)	7	150	**1 050**
Proposed (1 × 2-bed + 1 × 1-bed apartments)**	7	125	**875**

Result: A **net reduction of 175 L/day** compared with the existing lawful use (≈ 17 % betterment).

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6) Demonstrating compliance with 125 L/person/day (Part G)

Fitting / Use	Flow / Volume	Assumed use per person / day	Water use (L)
WC (dual-flush avg 4.5 L)	4.5 L/flush	4.8 flushes	21.6
Basin tap (5 L/min aerated)	5 L/min	1.6 min	8.0
Kitchen tap (6 L/min)	6 L/min	1.8 min	10.8
Shower (8 L/min efficient head)	8 L/min	5 min	40.0
Bath (150 L, 0.3 fill factor)	–	occasional, averaged	10.0

Fitting / Use	Flow / Volume	Assumed use per person / day	Water use (L)
Dishwasher (12 L/cycle, 0.33 ppd)	–	0.33 use	4.0
Washing machine (49 L/cycle, 0.2 ppd)	–	0.2 use	9.8
Total	–	–	**≈ 104 L**

Conclusion: With these fittings, average daily use ≈ **104 L/person/day**, comfortably below the 125 L/person/day standard for material change of use.

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7) Mitigation measures

The following water-efficiency measures will ensure reduced daily flows are achieved:

- Dual-flush / low-flush WCs
- Flow-restricted taps and showers
- Water-efficient A / A+ rated appliances
- Occupant guidance on responsible water use

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8) Scale & context

- The scheme precisely matches the **baseline occupancy (7 P)**, eliminating any theoretical increase.
- It achieves a **flow reduction of 175 L/day**, providing measurable betterment.
- The proposal is **very small-scale**, connects to the public sewer, and the absolute phosphorus contribution is **negligible**.

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9) Conclusion

- Foul drainage connects to **Five Fords WwTW** via the public sewer (no private treatment).
- Applying the **125 L/person/day standard**, total daily flows reduce from **1 050 → 875 L/day**.
- With no increase in population equivalent and a 17 % reduction in flows, the development achieves **nutrient neutrality with clear betterment**, ensuring no adverse effect on the integrity of the River Dee SAC.

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