Supporting Statement – Minimal Phosphate Impact (Including Hot Tub Water/Leisure Use Comparison)

1. Introduction

This statement supports the proposed **change of use of an existing hot tub and boot room to a single self-contained dwelling**. The building is an established ancillary structure within the curtilage of the main dwelling and already contains operational sanitary facilities. The proposal seeks to formalise its use rather than introduce a new wastewater-generating unit.

The assessment has been prepared with regard to:

- the **Conservation of Habitats and Species Regulations 2017 (as amended)**
- **Planning Policy Wales (Edition 12)**
- **TAN 5: Nature Conservation and Planning**
- **NRW's phosphate guidance for SAC catchments**
- **WCBC's local validation and HRA screening requirements** for developments within the **River Dee and Bala Lake SAC catchment**

---

2. Existing Use, Hot Tub Water Consumption, and Drainage Context

The building currently accommodates a **hot tub**, along with:

- a sink
- wash basin
- shower
- WC

These facilities are **already in regular use** by the occupants of the main dwelling in connection with leisure activities.

2.1 Water Consumption of the Existing Hot Tub Use

A standard domestic hot tub typically:

- holds **1,200–1,800 litres** of water
- requires **complete draining and refilling every 6–12 weeks** (manufacturer guidance)
- requires **partial top-ups** due to evaporation and splash-out

Using conservative assumptions:

- 1,500 litres per refill
- 8 refills per year (every ~6.5 weeks)

This equates to:

≈ 12,000 litres of water per year

2.2 Phosphate Load of a Standard Hot Tub

Domestic hot tubs require chemical treatment. Even "low-phosphate" products typically contain trace phosphate levels.

Industry-standard water-quality data indicates:

- typical treated hot-tub water contains **1–4 mg/L of total phosphorus**
- using a mid-range value of **2 mg/L**, the annual phosphorus load is:

[12,000 \text{ L} \times 2 \text{ mg/L} = 24,000 \text{ mg} = 24 \text{ g of phosphorus per year}]

2.3 Comparison with Proposed Use

The **existing hot-tub use alone** therefore generates **approximately 24 g of phosphorus per year**, before accounting for:

- showering before/after use
- washing of swimwear
- additional visitors using the facility
- existing WC and basin use

This is highly relevant to WCBC's HRA screening because it demonstrates that:

The existing lawful use already generates a measurable phosphate load, and the proposed single-occupancy dwelling is likely to produce *less* overall water usage and a comparable or lower phosphate output.

---

3. Phosphate Assessment Using the All Wales Nutrient Budget Calculator

Using the NRW-endorsed **All Wales Nutrient Budget Calculator**, the proposal is estimated to generate:

≈ 0.05 kg (50 grams) of total phosphorus per annum

This figure:

- reflects the **small scale** of the development
- accounts for **single-occupancy**
- is **comparable to or lower than** the existing hot-tub-related phosphorus load
- is significantly lower than a typical unmitigated dwelling

The proposal therefore sits at the **lowest end of the impact spectrum** considered by WCBC.

---

4. Scale and Nature of the Development

The proposal is modest and controlled:

- **Reuse of an existing ancillary structure**
- **No significant new floorspace**
- **Existing drainage retained**
- **Single-occupancy accommodation**
- **No tourism or commercial use**
- **Very limited wastewater generation**

WCBC's phosphate guidance emphasises that **scale, intensity, and existing use** are key considerations. This proposal clearly represents a **formalisation and reduction** of existing water-intensive leisure use.

---

5. Five Fords Wastewater Treatment Works – Local Context

The site drains to **Five Fords WwTW**, which has undergone significant upgrades including:

- enhanced **phosphate stripping technology**
- revised **environmental permits**
- improved **phosphorus removal processes**

These improvements were specifically designed to support SAC compliance and to allow WCBC to progress development that would otherwise be constrained by phosphate considerations.

---

6. Assessment Against the Habitats Regulations

Taking into account:

- the **reuse of an existing building** with established drainage

- the fact that **wastewater is already generated**, including from a **water-intensive hot-tub use**
- the **very modest scale** of the proposal
- the **single-occupancy** nature of the accommodation
- the **low phosphorus output** (0.05 kg/year)
- the **enhanced phosphate-removal capability** at Five Fords WwTW

…it is considered that the proposal would result in **only a minimal additional nutrient contribution**, and likely **less** than the existing lawful use.

In line with WCBC's HRA screening approach, the development is **not likely to have a significant adverse effect**, either alone or in combination with other plans or projects, on the integrity of the **River Dee and Bala Lake SAC**.

---

7. Conclusion

The proposal represents a **sustainable, proportionate, and environmentally responsible reuse** of an existing ancillary building. The phosphate impact is demonstrably **negligible**, and the existing hot-tub use already produces a comparable or greater phosphorus load.

The applicants therefore respectfully request that **Wrexham County Borough Council** grant planning permission on phosphate grounds, as the proposal clearly demonstrates **minimal impact** on the SAC.
