

Nutrient Statement

Project:	Land at White Hill, Pitton, SP5 1DY	Date:	2 nd July 2026
Subject:	Nitrogen budget	Author:	Nicola French

1.0 Background

- 1.1. This briefing note has been prepared to provide information for Wiltshire Council (WC) for the erection of a mobile home as rural workers accommodation on land at White Hill, Pitton, SP5 1DY. The information is provided under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations).
- 1.2. In January 2024, Defra issued a policy paper¹ notifying the designation of catchments sensitive to nutrient pollution. This includes the catchment of the Solent Habitats Sites identified as being in unfavourable condition on account of nitrogen pollution². The implication of this is that any local planning authority within the catchment of the Solent cannot grant consent for new residential development unless it can be shown to be net nitrogen neutral. A nitrogen calculation is therefore required to ensure that WC has sufficient information to carry out an appropriate assessment to consider the impacts of the application on the Solent Habitats Sites.
- 1.3. This note takes full account of all information provided by WC on the Council's dedicated nutrient neutrality website³ and draws on the calculator and guidance resources on the Government website *Tools and resources for calculating nutrient neutrality*⁴, most recently updated on 27th May 2025.

2.0 Nitrogen neutrality calculations

- 2.1. Box 1 below sets out the parameters and assumptions used to assess the additional nitrogen loading that will be generated by the new dwelling at White Hill.

¹ January 2024, DEFRA. The Designation of Sensitive Catchment Areas Notice 2024

² <https://www.gov.uk/government/publications/notice-of-designation-of-sensitive-catchment-areas-2024/notice-of-designation-of-sensitive-catchment-areas-2024>

³ <https://www.wiltshire.gov.uk/planning-bio-phosphorous-nitrogen-mitigation>

⁴ <https://www.gov.uk/government/collections/tools-and-resources-for-calculating-nutrient-neutrality>

Box 1: Assumptions relevant to the calculation of TN loading for x1 mobile home

- **Number of units:** x1 dwelling
- **Residential occupancy of the mobile home:** average occupancy of 2.4 people
- **Total waste water produced by single person:** 120 litres per day. This is based on a typical new build water use of 110 litres per day. It is unlikely that the occupants of the short stay accommodation unit will use water at this rate, but without data to support an alternative figure, a standard water consumption is assumed and is very precautionary.
- **Method of waste processing:** the mobile home will be served by a Marsh Ensign 6PE Sewage Treatment Plant (STP) that has been installed and is operational and functional. This system does not require dosing with ferric sulphate or other inorganic compound. The system is effective at stripping nitrogen from the treated effluent without dosing and is certified at 28.0mg TN per litre (see Appendix 1).
- **Current land use:** the red line area extends to 3027m². Prior to the location of the mobile home, the area comprised 2443m² of arable land and 584m² of an existing agricultural track. These are best categorized as:
 - **cereals**, defined in Natural England guidance⁵ as 'Agricultural areas on which arable crops, cereals, combinable crops and set-aside are farmed.' (0.244ha); and,
 - **mixed**, defined as 'Agricultural areas... ... where it is too difficult to select a single category to describe the farm type.' (0.055ha)
- **Proposed development:** The proposed scheme when operational is classed as **residential urban land**. The total area of the residential urban land will be 2.323ha.

2.2. The most recent Natural England Nitrogen Calculator for the Solent has been used to calculate the nutrient load generated by x1 dwelling using the average occupancy figures derived in Box 1.

2.3. Stage 1 of the calculation is set out below.

Water infrastructure information		
Description of required information	Data entry column - user inputs required	Additional data entry column - user inputs may be required
Date of first occupancy (dd/mm/yyyy):	01/12/2027	
Average occupancy rate (people/dwelling or people/unit):	2.40	
Water usage (litres/person/day):	120	
Development proposal (dwellings/units):	1	
Include deductible acceptable loading?	Yes	
Wastewater treatment works:	Septic Tank user defined	
Current wastewater treatment works N permit (mg TN/litre):	Enter value in cell C11	28
Not applicable	Not applicable	
Not applicable	Not applicable	
Final calculation of nutrient load from wastewater		
Description of values generated	Values generated	
Wastewater nutrient loading		
Additional population (people):	2.40	
Wastewater by development (litres/day):	288.00	
Annual wastewater TN load (kg TN/yr):	2.73	

⁵ <https://www.gov.uk/guidance/using-the-nutrient-neutrality-calculators>

- 2.4. The calculations show that the treatment of foul from x1 dwelling will generate **2.73kg** of Total Nitrogen (TN) per year. Note that the 20% buffer has not been applied at this stage. Rather it is applied to the final calculation once the overall budget for the site is established.

Stages 2 & 3: calculation of existing and proposed nitrogen loading from the ground

- 2.5. To address the overall net nutrient budget for the scheme, it is important to also consider how rates of nutrient leaching from the ground will change in response to a changed land use. Stages 2 & 3 of the calculation assess the Total nitrogen loading to the water environment that is currently taking place and compares this to the loading that will occur once the site has been developed. Both stages are set out below, using the categorisations and land area set out in Box 1.

Current land use information			
Description of required information	Data entry column - user inputs required		
Operational catchment:	Lower Test and Southampton Streams		
Soil drainage type:	Freely draining		
Annual average rainfall (mm):	850.1 - 900		
Within nitrate vulnerable zone (NVZ):	Yes		
Current land uses			
Existing land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)	
Cereals	0.24	6.60	
Mixed	0.06	1.40	
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Future land uses		
New land use type(s) - user inputs required	Area (ha) - user inputs required	Annual nitrogen nutrient export (kg TN/yr)
Residential urban land	0.30	4.94
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Totals:	0.30	4.94

Stage 4: calculation of the overall nitrogen budget

- 2.6. Finally, the calculator generates a net nitrogen loading for the scheme to take account of both loading from treated foul and the change in loading deriving from the change of land use for the new dwelling. This is set out in the Stage 4 summary, below.

Total nutrient budget calculations	
Description of values generated	Values generated
Wastewater TN load (kg TN/year):	2.73
Net land use TN change (kg TN/year):	-3.06
TN budget:	-0.33
TN budget + 20% buffer:	-0.33
Annual nutrient budget	
The total annual nitrogen load to mitigate is (kg TN/yr):	0.00

- 2.7. The calculations show that the mobile home reduces loading to the Solent catchment by 0.33kg TN per year. This is because the nutrient inputs deriving from the mobile home and its curtilage are smaller than the annual inorganic fertilizer inputs onto the cereal crops. The scheme is therefore better than nutrient neutral. There is **no requirement for mitigation**.

3.0 Conclusion

- 3.1. A nitrogen budget calculated in line with the most current Natural England guidance and calculator for a new mobile home on land at White Hill, Pitton demonstrates that it will reduce nitrogen loading to the water environment of the Solent catchment and is better than nutrient neutral. No mitigation is required.
- 3.2. The mobile home will not adversely affect the integrity of the Solent Habitats Sites, either alone or in combination with other plans and projects.

NF020726

Appendix 1
PIA certification for Marsh Ensign Sewage Treatment Plant



Certificate

408.01C01

Marsh Industries Limited

Head Office Addington Park Industrial Park, Little Addington NN14 4AS UK

EN 12566-3, Annex B

Small wastewater treatment systems for up to 50 PT

Small wastewater treatment system Ensign Range E L

Fluidised bed reactor system in a GRP tank

Test report PIA2022-408B25

Evaluation of the nominal sequences of the 38-week testing

Nominal organic daily load (influent)	0.30 kg BOD ₅ /d		
Nominal hydraulic daily load	0.9 m ³ /d		
Material	GRP		
Treatment efficiency		Efficiency	Effluent
	COD	92.2 %	63 mg/l
	BOD ₅	95.6 %	14 mg/l
	TN _b	53.5 %	28 mg/l
	NH ₄ -N	97.8 %	1.0 mg/l
	P _{tot}	28.7 %	5.4 mg/l
	SS	94.5 %	21 mg/l

Evaluation of the complete 38-week testing

Electrical consumption	1.9 kWh/d
Number of desludging	0

Tested by:

PIA – Prüfinstitut für Abwassertechnik GmbH
(PIA GmbH)

Hergenrather Weg 30
52074 Aachen, Germany

This document replaces neither the declaration
of performance nor the CE marking.

PIA – Sustainable Certification
M. Wermter
geprüft – tested – teste

Martina Wermter

August 2022



Notified Body
No.: 1739

