Trotting Mare Caravan Park, Overton, Wrexham

Nutrient Neutrality & Shadow Habitats Regulations Assessment

For The Trotting Mare Caravan Park Ltd

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Trotting Mare Caravan Park, Overton

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1.0 INTRODUCTION

1.1 Background

This Nutrient Neutrality & Shadow Habitats Regulations Assessment has been prepared by KRS Enviro at the request of The Trotting Mare Caravan Park Ltd to support a planning application for the replacement of 18 touring pitches with 18 static caravans and all associated works at the Trotting Mare Caravan Park, Overton, Wrexham, LL13 0LE.

Recent CJEU Dutch Nitrogen case law relating to impacts of nutrient laden water impacting on sensitive ecological sites, has highlighted a requirement to mitigate against effluent flows from proposed developments. Most aquatic systems are naturally low in biologically available Phosphate. So, when Phosphate availability increases, aquatic plants tend to grow rapidly and cause degradation of water quality (e.g. algal blooms).

The application site falls within the catchment flowing into the River Dee and Bala Lake Special Area of Conservation (SAC). Any new housing, including single dwellings and holiday accommodation, may result in an increase in nutrients contained within water discharge.

Whilst this report is not a Habitats Regulation Assessment, it would be the principal piece of information used to guide the outcome of a Habitats Regulations Assessment. A Habitats Regulation Assessment would screen for affected sites of high importance, which might be influenced by the project.

While this duty is on the "competent authority" (rather than the planning applicant), the information in this document has nevertheless been provided to assist the Wrexham Borough County Council in discharging this duty. It is for this reason that the term shadow HRA (sHRA) is used to describe this document. The information within this sHRA is provided so that Wrexham Borough County Council can screen the proposals through a Habitats Regulations Assessment (HRA), to determine whether they are likely to have a significant effect on the SAC and if required, undertake an Appropriate Assessment.

1.2 Discussion with Regulators

Consultation with the relevant regulators has been undertaken including Dŵr Cymru/Welsh Water and Natural Resources Wales. Dŵr Cymru/Welsh Water is responsible for the disposal of waste water for this area of Wales however, there is no formal drainage from the existing site. The existing caravan park was historically served by a septic tank. This has now been replaced by a Marsh Ultra Polylock 180PE Package Treatment Plant.

Natural Resources Wales have stated that:

"We note the application site is within the catchment of the River Dee and Bala Lake Special Area of Conservation (SAC). In line with our Advice to Planning Authorities for Planning Applications Affecting Nutrient Sensitive River Special Areas of Conservation (22 October 2025), under the Habitats Regulations, Planning Authorities must consider the impact of proposed developments on water quality within SAC river catchments. We therefore advise you to consider whether the proposals, as submitted, would increase the volume of foul discharge from the site in planning terms."

1.3 Scope

In order to complete a Habitats Regulations Assessment a calculated response for mitigation i.e. information on how additional nutrients from foul water is to be dealt with. An applicant may source their own mitigation and deliver a 'scheme of betterment' that is achieved by reducing the level of nutrients compared to the existing situation.

2.0 LOCATION & DEVELOPMENT DESCRIPTION

2.1 Site Location

The site is located at Trotting Mare Caravan Park, Overton, Wrexham, LL13 0LE. The site lies just off the A528 in Knolton (see Appendix 1). The National Grid Reference (NGR) of the site is 337860, 338762.

2.2 Existing and Proposed Development

The site is circa 0.37 hectares (ha), consisting of the establishing caravan park site, existing touring pitches along with existing static caravans. The Trotting Mare Caravan Park is an adults only park, open all year round.

The planning application is for the replacement of 18 touring pitches with 18 static caravans and associated works (see Appendix 1). The site layout will remain unchanged as the site already benefits from set out pitches with the required services along with substantial screening and planting.

The proposed development represents a change in accommodation type rather than an increase in the number of pitches or maximum design population. The caravan park currently operates throughout the year as an adults-only facility, with existing touring accommodation used by annual pitch holders. These arrangements will remain unchanged. However, it is recognised that the replacement static caravans could experience greater annual utilisation than the existing touring caravans. The potential increase in annual wastewater generation and associated phosphorus loading has therefore been considered within the quantitative assessment in Section 5.2.

The pitches will remain serviced pitches, where the caravan is directly connected to individual utility services. These serviced pitches have individual foul drainage connections; foul waste will then continue to be managed through communal drainage infrastructure provided by the park operator (details are provided below).

Further details with regard to the proposed development can be found in the accompanying information submitted with the planning application.

2.3 Ground Levels

The site slopes from west to east with ground levels of approximately 90.93 metres Above Ordnance Datum (mAOD) on the west of the site and 86.15mAOD on the east of the site.

2.4 Catchment Hydrology / Drainage

There are 3 ponds located at the south west of the site and a further pond located at the north east of the site. There is a drainage ditch located approximately 390m to the east of the site. The site is located within the catchment of the River Dee and the Bala Lake SAC with the River Dee being located approximately 2km to the northwest of the site.

The site is located within an area of moderate rainfall. The 1961-1990 Standard Average Annual Rainfall (SAAR) for the site as recorded in the FEH Webservice is 706mm per annum. The UK national average is 832mm per annum.

The site and surrounding area are not served by public surface water, foul, or combined sewer networks. The existing caravan park was previously served by an old septic tank, the Phosphate

removal efficiency of the old septic tank was minimal. The effluent was then discharged to the highway drainage system adjacent to the site entrance. The highway drain ultimately discharges to a drainage ditch located to the east of the site.

The park operator has recently installed a new package treatment plant sized to accommodate the full capacity of the caravan park, with the treated effluent continuing to discharge to the existing outfall location. The package treatment plant has a significantly higher level of treatment and Phosphate removal than the old septic tank.

2.5 Ground Conditions

The British Geological Survey (BGS) map shows that the bedrock deposits consist of the Chester Formation - pebbly (gravelly) sandstone. These sedimentary rocks are fluvial in origin. They are detrital, ranging from coarse- to fine-grained and form beds and lenses of deposits reflecting the channels, floodplains and levees of a river or estuary (if in a coastal setting).

The superficial deposits consist of Till, Devensian - diamicton. These sedimentary deposits are glacigenic in origin. They are detrital, created by the action of ice and meltwater, they can form a wide range of deposits and geomorphologies associated with glacial and inter-glacial periods during the Quaternary.

Information from the National Soil Resources Institute details the site area as being situated on slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils.

2.6 Groundwater

The site is not located within a Source Protection Zone (SPZ) or a Principal Aquifer. The site is not located within a Natural Resources Wales Protection Zone (SPZ). SPZ's have been defined by Natural Resources Wales around major public water supplies with the intent to show the risk of contamination from any activities that might cause pollution in the area. Three zones are defined: SPZ 1 is the Inner Zone (highest risk); SPZ 2 is the Outer Zone (average risk); and SPZ 3 is the Total Catchment (least risk).

2.7 Contaminated Land

KRS Enviro are not aware of any historical industrial land use. The client has not provided information to suggest the potential for contamination within the site boundary from past land uses.

3.0 DESCRIPTION OF THE RIVER DEE AND BALA LAKE SAC

3.1 Introduction

The application site falls within the catchment flowing into the River Dee and Bala Lake as a SAC. The SAC covers an area of 1271.32 hectares (ha).

3.2 General Site Character

- Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins) (4%)
- Salt marshes, Salt pastures, Salt steppes (2%)
- Inland water bodies (Standing water, Running water) (90%)
- Improved grassland (2%)
- Broad-leaved deciduous woodland (2%)

3.3 Reasons for SAC Designation

Annex I habitats that are a primary reason for selection of this site

- 3260 Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation
  Species occurrence description not yet available

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site

- Not Applicable.

Annex II species that are a primary reason for selection of this site

- 1106 Atlantic salmon *Salmo salar.*
  Habitat occurrence description not yet available
- 1831 Floating water-plantain *Luronium natans*
  Habitat occurrence description not yet available

Annex II species present as a qualifying feature, but not a primary reason for site selection

- 1095 Sea lamprey *Petromyzon marinus*
- 1096 Brook lamprey *Lampetra planeri*
- 1099 River lamprey *Lampetra fluviatilis*
- 1163 Bullhead *Cottus gobio*

- 1355 Otter *Lutra lutra*

3.4 Quality and Importance

Watercourses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation for which this is considered to be one of the best areas in the United Kingdom. Luronium natans for which this is considered to be one of the best areas in the United Kingdom. Petromyzon marinus for which the area is considered to support a significant presence. Lampetra fluviatilis for which the area is considered to support a significant presence. Lampetra planeri for which the area is considered to support a significant presence. Salmo salar for which this is considered to be one of the best areas in the United Kingdom. Cottus gobio for which the area is considered to support a significant presence. Lutra lutra for which the area is considered to support a significant presence.

3.5 Threats, Pressures and Activities

The most important impacts and activities with high effect are shown in Table 1.

Table 1 - Threats, Pressures and Activities with Impacts on the River Dee and Bala SAC

Rank	Threat and Pressure	Inside /Outside
Negative Impacts		
None		
Positive Impacts		
Medium	Other ecosystem modifications	Inside

4.0 FOUL WATER DRAINAGE

4.1 Foul Water Drainage Strategy

Drainage of the site will take place with separate systems for foul and surface water drainage. The site is not served by public sewers; therefore, all foul water from the proposed development will discharge to an adequately sized package treatment works with discharge to the watercourse to the east of the site via the highway drain located adjacent to the site boundary. The proposals can be summarised as follows:

- Foul water is piped from the site with a separate foul water drainage system.
- The system discharges the maximum foul flows into a specialist unit.
- The size of the works has been chosen to cater for the development. The discharge from the site is not considered substantial.
- Following treatment, the discharge from the units is 'clean' water and is discharged into the watercourse.
- There are no moving parts.
- The treatment system will meet the standards of BS EN 12566 for small sewage treatment plants.
- The ultimate foul water discharge from the site will to be the watercourse to the east of the site.

Standard pollution prevention procedures have been implemented based on industry best practice and Environment Agency Pollution Prevention Guidelines (PPGs), to mitigate potential impacts on the water environment, including:

- BS 6297:2007+A1:2008: Code of practice for the design and installation of drainage fields for use in wastewater treatment.
- Part H of the Building Regulations.
- Septic tanks and treatment plants: permits and general binding rules guidance.
- Environmental Permitting (England and Wales) Regulations 2010 (as amended).

The foul drainage has been designed with the following minimum distances:

- 50m from water abstraction points.
- 15m from any building, and sufficiently distant from any other soakaway, including roof water.
- 2m from a boundary.

Drainage field disposal should only be used when percolation tests indicate average values of Vp of between 15 and 100 and the preliminary site assessment and trial hole tests have been unfavourable. The ground conditions at the site indicate unfavourable conditions for percolation (see paragraph 2.5 above). Percolation tests were carried out by a third party in December 2023. 3 trial pits were excavated. However, no percolation was observed, and the tests were abandoned after 4 hours. Therefore, a drainage field will not be viable at the site and discharge to a watercourse will be required. Appendix 2 shows the location of the Package Treatment Plant (PTP) and discharge point. The PTP discharges to the highway drain adjacent to the site boundary which flows to the watercourse to the east of the site.

All foul water from the proposed accommodations will discharge to an adequately sized package treatment works. The PTP installed is the Marsh Ultra Polylock 180PE suitable for 180 people, therefore the size of the package treatment works has been chosen to cater for the development. The Marsh Ultra Polylock 180PE PTP specifications are shown in Appendix 2.

The submerged aeration plant is suitable for domestic and light commercial or communal applications. The size of the PTP has been chosen to cater for the development. Therefore, foul water will receive an appropriate level of treatment which will minimise the risk of pollution.

The treatment system has been designed in accordance with British Waterways Code of Practice Flows and Loads 4. The package treatment plant has been designed to serve the maximum occupancy of the 54 caravan pitches (to include the existing touring pitches and the proposed static caravans). Based on an assumed occupancy of two persons per caravan and a foul water generation rate of 150 litres/person/day, the design population equivalent is 108 persons, resulting in an estimated average daily foul discharge of approximately 16.20 m^3/day. An Environmental Permit will therefore be obtained from Natural Resources Wales for the proposed discharge.

PTP's are independently tested and certified to BS EN 12566-3 to produce a final effluent to a standard of 20mg/l Biological Oxygen Demand (BOD), 30mg/l Suspended Solids and 20mg/l Ammonia on a 95 percentile basis. The Marsh Ultra Polylock 180PE package treatment plant treatment efficiencies are as follows which exceed BS EN 12566-3:

- 11mg/l BOD
- 16mg/l Suspended Solids
- 8mg/l Ammonia on a 95 percentile basis

Therefore, foul water will receive an appropriate level of treatment which will minimise the risk of pollution and the level of treatment proposed, which exceed BS EN 12566-3, ensures no likely significant effect on the River Dee and Bala Lake SAC.

Whilst the proposed development does not increase the volume of foul wastewater generated by the site, the replacement of the former septic tank with a modern Marsh Ultra Polylock 180PE Package Treatment Plant represents a significant environmental betterment.

The former septic tank provided only limited treatment prior to discharge. In contrast, the Marsh Ultra Polylock Package Treatment Plant is designed and manufactured to comply with BS EN 12566 and provides a substantially higher standard of wastewater treatment, including significantly improved suspended solids, biochemical oxygen demand and nutrient removal performance.

Consequently, although the proposal will not increase foul wastewater generation, the quality of the final treated effluent discharged from the site will be substantially improved compared with the previous septic tank arrangement. The proposal therefore represents an overall environmental improvement in relation to foul water treatment and discharge.

4.2 Monitoring and Maintenance Responsibility

The owner of the site will be responsible for the system and for ensuring that the quality of the effluent does not breach the Environmental Permit Standards issued by Natural Resources Wales. A legally binding agreement between the property owners will be entered into.

To ensure that the system will be maintained and monitored appropriately for the lifetime of the development (i.e. several decades) it will be necessary to secure adherence to the Maintenance Plan via a legally binding planning condition or planning obligation.

4.3 Phasing

The foul water drainage system has been installed and will be fully operational before occupation of the proposed static caravans occurs.

4.4 Financing

The monitoring and maintenance of the system will be financed 'in perpetuity'. Average annual costs for operating and maintenance (including emptying) are typica[redacted].

4.5 Maintenance

A Service Agreement with a reputable contractor[1] has been entered into. This will provide certainty that the PTP is operating to optimum levels. The system will operate under an Environment Permit ensuring that procedures are in line with Best Practice Guidelines thus reducing the potential for pollution to groundwater and surface water.

The foul water drainage system will be inspected, maintained and operated in accordance with the manufactures and Natural Resources Wales guidelines. The PTP will be operated and maintained fully in accordance with Natural Resources Wales guidelines 'running and maintaining a septic tank or small sewage plant'[2]. Full compliance will also be made to Natural Resources Wales 'How to run your household sewage treatment system well'[3]. A maintenance record will be kept as a record of the checks that have been completed.

Maintenance will be carried out by suitably trained and qualified personnel in line with the manufacturer's specification with professional servicing every 12 months with a detailed check every 6 months. This is necessary even in the first year when components are under warranty. Regular maintenance of the system will follow the manufacturer's instructions, using service operators who are experienced in dealing with sewage treatment systems.

The PTP will be replaced beyond its guaranteed lifespan (usually circa every 25 years). Any replacement PTP will be at least as effective in achieving removal of phosphorus as that initially approved. The outlet will be inspected regularly and six-monthly laboratory testing of outlet water quality will be undertaken and replacement of multiple parts of the dosing system every 1, 2, 5 and 10 years as per the maintenance manual will be carried out. A registered contractor

[1] https://www.britishwater.co.uk/directory/accredited-service-engineers.aspx
[2] https://cdn.naturalresources.wales/permits-and-permissions/water-discharges-and-septic-tanks/running-and-maintaining-a-septic-tank-or-small-sewage-plant/?lang=en
[3] https://cdn.cyfoethnaturiol.cymru/media/689875/how-to-run-your-household-sewage-treatment-210619-4.pdf

will be used to empty the tank of sludge every 1 to 2 years and according to the manufacturer's instructions.

Natural Resources Wales has confirmed that the sludge will pose no significant risk to the River Dee and Bala Lake SAC, Natural Resources Wales guidance[4] states the following:

"In our opinion, with the current regulatory framework in place governing carriage, treatment and disposal of private system sludge, Planning Authorities can reasonably conclude that the disposal of sludge from new, private sewage treatment systems is unlikely to have a significant effect on a river SAC."

A duty of care waste transfer note will be obtained from the registered contractor which will describe the quantity and type of waste that has been taken away and ensures that the operator is handling and disposing of the sludge correctly. The transfer notes are legal documents which are signed by both parties and will be kept to help manage the system and meet legal requirements and be convenient to pass on to new householders.

4.6 Spillage

Most spillages on development are of compounds that do not pose a serious risk to the environment if they enter the drainage in a slow and controlled manner with time available for natural breakdown in a treatment system. Therefore, small spillages of oil, milk or other known organic substances should be removed where possible using soak mats as recommended by Natural Resources Wales, with residual spillage allowed to bioremediate in the drainage system.

In the event of a serious spillage, either by volume or of unknown or toxic compounds, then isolate the spillage with soil, turf or fabric and block outlet pipes from chamber(s) downstream of the spillage with a bung(s) (a bung for blocking pipes may be made by wrapping soil or turf in a plastic sheet or closely woven fabric).

Contact Natural Resources Wales immediately. Tel: 0300 065 3000.

[4] https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/our-role-in-planning-and-development/advice-to-planning-authorities-for-planning-applications-affecting-phosphorus-sensitive-river-special-areas-of-conservation/?lang=en

5.0 PART 1: NUTRIENT BUDGET

5.1 Introduction

The potential impacts from the project are now reviewed based on the Source, Pathway, Receptor Model. The proposals may have an impact of the designation of the River Dee and Bala Lake as a SAC.

Please find below additional details with regards to the foul water discharge.

1. The site is located within the River Dee and Bala Lake SAC catchment.
2. There will be no direct foul water discharge to the River Dee and Bala Lake SAC.
3. The PTP will discharge to a watercourse.
4. It is understood that there are no discharges to ground within 200m.
5. The density of discharge is less than 1 per hectare (25 per km^2).
6. There will be no direct or indirect losses of SAC habitats as a result of the works.
7. There will be no loss of habitat types within the identified SAC's and the related freshwater catchment area and is not considered to affect the functioning of the habitat within the SACs as a whole.
8. There will be no direct or indirect losses of SAC habitats as a result of the proposals. The site lies outside the defined SAC designated areas but lies within the defined freshwater river catchment area which encompasses part of the SAC.
9. Impacts on the conservation objectives of the SACs would therefore potentially be limited to the defined freshwater catchment area only. However, there will be no measurable or specific decline in the River Dee and Bala Lake SAC habitat area, structure or relationships that define the function of the site.

5.2 Existing and Proposed Wastewater Generation

The existing touring caravan pitches are fully serviced, with connections to the site's private foul drainage infrastructure. The proposed static caravans will similarly be serviced. For the purposes of calculating wastewater generation, the following assumptions have been adopted:

- Number of pitches: 18.
- Occupancy: 2 persons per pitch.
- Wastewater generation: 150 litres/person/day.
- Existing and proposed operating season: year round.

An occupancy of two persons per pitch is considered appropriate having regard to the adults only nature of the caravan park and the information supplied by the operator. The wastewater generation rate of 150 litres/person/day has been adopted for both the existing serviced touring pitches and proposed serviced static caravans, subject to confirmation against the applicable British Water design guidance.

The resulting design wastewater generation is:

18 pitches × 2 persons × 150 litres/person/day = 5,400 litres/day

This is equivalent to 5.40m^3/day.

Table 2 - Existing and Proposed Design Wastewater Generation

Parameter	Existing touring pitches	Proposed static caravans
Number of pitches	18	18
Persons per pitch	2	2
Design population	36	36
Wastewater generation	150 L/person/day	150 L/person/day
Design wastewater flow	5.40 m^3/day	5.40 m^3/day
Change in design flow	0 m^3/day	

The proposed development does not increase the number of pitches or the assumed number of persons accommodated per pitch. Accordingly, on an equivalent occupancy basis, the proposed development does not increase the design wastewater generation associated with the 18 affected pitches. However, the design flow represents wastewater generation when all 18 pitches are occupied. It does not establish the volume of wastewater generated annually, which depends upon the frequency and duration of occupation.

The Council's concerns regarding potential increased annual occupancy are therefore considered separately below.

5.3 Existing Site Occupancy

The caravan park operates throughout the year and accommodates adults only. Information provided by the operator indicates that the existing accommodation is primarily occupied by seasonal pitch holders, with the same owners generally using their caravans throughout the year. The operator has supplied the indicative occupancy information, shown in Table 3, for the wider caravan park. For the purposes of the following illustrative calculations, the reported utilisation of the wider touring accommodation has been assumed to be representative of the affected pitches.

The operator's figures actually suggest that the static caravans are occupied less frequently than the touring caravans, not more frequently. On those figures, the static caravans have approximately 12.50% lower annual utilisation than the touring pitches. The information indicates that the touring pitches are already used regularly throughout the year, rather than being restricted to occasional short-term holiday occupation.

There is an important qualification: these figures describe the operator's reported use of the two accommodation types. They do not prove how the replacement static caravans will be occupied in future.

Table 3 - Reported Existing Occupancy

Accommodation Type	Number of Pitches	Average Occupied Midweek	Average Occupied at Weekends	Calculated Annual Utilisation
Touring caravans	43	12	30	39.90%
Static caravans	18	5	8	34.90%

5.4 Estimated Existing Annual Occupancy

The operator's reported occupancy figures can be used to estimate annual utilisation. For the touring accommodation:

- Average weekday occupancy: 12 of 43 pitches
- Average weekend occupancy: 30 of 43 pitches

Assuming five weekdays and two weekend days per week, the average daily occupancy proportion is:

$$[(12 \times 5) + (30 \times 2)] \div (43 \times 7)$$

$$= 120 \div 301$$

$$= \mathbf{39.87\%}$$

Applying this proportion to the 18 affected touring pitches gives an estimated average of:

$$18 \times 39.87\% = 7.18 \text{ occupied pitches/day}$$

Assuming two persons per occupied pitch, the estimated average wastewater generation is:

$$7.18 \times 2 \times 150 = \text{approximately } 2{,}153 \text{ litres/day}$$

The corresponding annual wastewater generation is:

$$2.153 \text{ m}^3\text{/day} \times 365 \text{ days} = \text{approximately } 786 \text{ m}^3\text{/year}.$$

Table 4 - Estimated Existing Annual Wastewater Generation

Parameter	Value
Touring pitches affected	18
Estimated average occupancy	39.87%
Average occupied pitches/day	7.18
Persons per occupied pitch	2
Wastewater generation	150 L/person/day
Average wastewater flow	2.153 m^3/day
Annual wastewater volume	786 m^3/year

These calculations provide a site-specific annual wastewater baseline based on the operator's reported occupancy.

5.5 Phosphorus Loading Assessment

The principal nutrient of concern is phosphorus, given the location of the site within the River Dee and Bala Lake SAC catchment. The site was previously served by a septic tank, which has subsequently been replaced by a Marsh Ultra Polylock 180PE PTP. The PTP has a nominal design capacity of 180 population equivalent.

5.5.1 Assessment Assumptions

For the purposes of a comparison, Table 5 shows the total phosphorus concentrations considered within this assessment. The total phosphorus concentrations adopted within this assessment are based on the Welsh Government Nutrient Budget Calculator and accompanying guidance (2025)[5], [6], [7].

The Welsh Government methodology specifies default effluent concentrations of 11.60 mg TP/L for septic tanks and 9.70 mg TP/L for package treatment plants. These values are recommended for use where treatment system specific phosphorus concentrations are unavailable.

The adopted values therefore provide a recognised, guidance-based approach to assessing the phosphorus loading associated with the former septic tank and replacement Marsh Ultra Polylock 180PE PTP.

Table 5 - Total Phosphorus Concentrations

Treatment Arrangement	Total Phosphorus Concentration
Former septic tank	11.60 mg TP/L
Replacement package treatment plant	9.70 mg TP/L

5.5.2 Calculation Methodology

Annual phosphorus loading has been calculated using:

$$\text{Annual TP loading (kg/year)} = \text{Annual wastewater volume (m}^3\text{/year)} \times \text{Total phosphorus concentration (mg/L)} \div 1000$$

This calculation provides the estimated mass of phosphorus discharged annually. It does not account for any subsequent phosphorus retention, attenuation or removal within the receiving drainage system or downstream watercourses.

5.6 Existing Annual Phosphorus Loading

Using the estimated existing annual wastewater generation of 786 m^3/year and the provisional septic tank concentration of 11.60 mg TP/L:

$$\text{Existing TP loading} = 786 \times 11.6 \div 1000$$

$$= 9.12 \text{ kg TP/year}$$

[5] https://www.gov.wales/nutrient-budget-calculator?utm_source=chatgpt.com
[6] https://www.gov.wales/sites/default/files/publications/2025-06/nutrient-budget-calculator-frequently-asked-questions.pdf?utm_source=chatgpt.com
[7] https://www.gov.wales/sites/default/files/publications/2025-06/nutrient-budget-calculator-guidance.pdf?utm_source=chatgpt.com

This represents the estimated annual phosphorus loading attributable to the 18 affected touring pitches under the septic tank treatment arrangement.

5.7 Proposed Annual Phosphorus Loading – No Intensification

The applicant has confirmed that the proposal is intended to replace the existing touring pitches without increasing the number of guests, extending the operating season or changing the adults-only nature of the caravan park. On this basis, a comparison has been undertaken assuming that the proposed static caravans experience the same annual utilisation as the existing touring pitches.

The annual wastewater generation would therefore remain approximately 786 m^3/year.

Using the PTP concentration of 9.70 mg TP/L:

$$\text{Proposed TP loading} = 786 \times 9.7 \div 1000$$

$$= 7.62 \text{ kg TP/year}$$

Table 6 - Phosphorus Loading – Equivalent Annual Occupancy

Parameter	Existing	Proposed
Annual wastewater generation	786 m^3	786 m^3
Treatment	Septic tank	Package treatment plant
Assumed TP concentration	11.60 mg/L	9.70 mg/L
Annual TP loading	9.12 kg	7.62 kg
Change in annual TP loading	---	- 1.50 kg (- 16.40%)

Under these assumptions, the replacement PTP arrangement would provide an estimated reduction in annual phosphorus loading of approximately 1.50 kg or 16.40%. This indicates environmental betterment under equivalent annual occupancy conditions.

5.8 Sensitivity Assessment – Potential Intensification

The Ecology Team at Wrexham Borough Council has raised concerns that static caravan accommodation may experience greater annual utilisation than touring caravan accommodation. Although the applicant does not propose increased visitor numbers or an extended operating season, it is acknowledged that the replacement of touring caravans with static caravans could potentially change the frequency of occupation.

A sensitivity assessment has therefore been undertaken to establish the effect of increased annual utilisation upon phosphorus loading. The assessment retains the existing annual wastewater baseline of approximately 786 m^3/year and applies increases of 10% and 20% to the proposed annual wastewater generation, as shown in Table 7. The assumed package treatment plant phosphorus concentration remains 9.70 mg TP/L.

Table 7 - Sensitivity to Increased Annual Occupancy

Scenario	Proposed Annual Wastewater Volume	Proposed TP Loading	Change Against Existing 9.12 kg/year
No Intensification	786 m^3	7.62 kg	−1.50 kg
10% increase	865 m^3	8.39 kg	−0.73 kg
20% increase	940 m^3	9.11 kg	0.00 kg

The calculations indicate that, based on the adopted phosphorus concentrations, the improvement in wastewater treatment would offset an increase in annual wastewater generation of up to approximately 20% compared with the historical septic tank arrangement. At this threshold, the estimated annual phosphorus loading would be equivalent to the historical baseline. The 10% sensitivity scenario indicates a reduction in annual phosphorus loading.

The assessment therefore demonstrates that the replacement PTP could accommodate a degree of increased annual utilisation of approximately 20% without increasing phosphorus loading. The 20% threshold represents the calculated buffer and this assessment therefore demonstrates the substantial environmental betterment associated with the replacement PTP.

Guidance recommends a 20% buffer to ensure the calculations are robust and precautionary. The 20% buffer accounts for uncertainties within the nutrient budget calculations and gives confidence that mitigation of the nutrient budget will remove the risk of adverse effects on site integrity in the River Dee and the Bala Lake SAC.

5.9 Source

There are numerous sources of nutrients that contribute to phosphorous being found in domestic waste water [8] and other discharges (e.g. agriculture, green space, urban development's etc.).

5.10 Pathway

The pathway from site, to receptor, is via watercourses. The site is located within the catchment of the River Dee and the Bala Lake SAC with the River Dee being located approximately 2km to the northwest of the site. Due to the distance from the site to the SAC and the local geology, there will be no adverse effect from the site to the River Dee and Bala Lake SAC.

5.11 Receptor

The receptor of principal concern is the River Dee and Bala Lake SAC. Within this area various locations are of national and internationally significance for wildlife. Thus, the River Dee and Bala Lake designated as a SAC under the Habitat Regulations. The site is located within the River Dee and Bala Lake SAC catchment however; there will be no discharge of water from the site to the River Dee and Bala Lake SAC.

5.12 Additional Mitigation

The proposed development will incorporate additional tree and hedgerow planting within the existing caravan park. These measures will improve vegetation cover, provide ecological and biodiversity benefits and contribute to the wider environmental enhancement of the site.

The planting will be implemented and maintained as part of the proposed development. The quantitative nutrient budget does not attribute a phosphorus reduction to these measures. The assessment of nutrient neutrality is based on the retained accommodation capacity, existing

[8] https://www.sepa.org.uk/media/163158/crew_septic_tanks.pdf

site-specific occupancy characteristics and the improvement in wastewater treatment associated with the replacement of the former septic tank with the Marsh Ultra Polylock 180PE PTP.

The proposed planting provides supplementary environmental benefits and does not form part of the calculated phosphorus offset.

5.13 Summary

There will therefore be:

- no increase in the number of caravan pitches;
- no increase in the permitted occupancy of the site;
- no increase in the design population served by the foul drainage system;
- no increase in wastewater generated by the development in planning terms.

Accordingly, the proposal will not increase the volume of foul water requiring treatment or discharge compared with the existing lawful use of the site. The proposal represents a change in accommodation type without increasing the number of pitches or introducing additional foul drainage connections. Wastewater from the affected pitches will continue to be collected through the park's communal drainage infrastructure. The nutrient assessment compares the historical septic tank arrangement with the replacement Marsh PTP, including consideration of potential increased annual occupancy.

Table 8 summarises the existing and proposed foul drainage arrangements and demonstrates that the proposal does not result in an increase in wastewater generation whilst delivering a significant improvement in the quality of the treated effluent.

Table 8 - Comparison of Existing and Proposed Foul Water Drainage Arrangements

Parameter	Existing Development	Proposed Development	Change
Caravan pitches	18 touring pitches	18 static caravans	None
Maximum site occupancy	Existing lawful occupancy	Existing lawful occupancy	None
Wastewater generation	Existing	No increase	None
Design population	Existing	Unchanged	None
Foul drainage network	Existing site drainage	Existing site drainage retained	None
Treatment system	Former septic tank	Marsh Ultra Polylock 180PE Package Treatment Plant	Significant improvement
Final discharge location	Highway drain to drainage ditch east of the site	Same discharge location	None
Effluent quality	Limited treatment	Modern BS EN 12566 compliant treatment	Significant improvement
Phosphorus removal	Limited	Significantly improved	Betterment

It is considered vertical nutrient migration from percolating surface water will be largely inhibited and the potential risk to groundwater very low.

The site is not located within an area at low risk from flooding. Therefore, given their distance and the absence of potential overground flow, it is considered that the potential risks posed to these water features from on-site phosphates is very low.

6.0 STAGE 1: SCREENING AND ASSESSMENT OF LIKELY SIGNIFICANT EFFECT

6.1 Introduction

The assessment of likely significant effect is the first stage of a Habitats Regulation Assessment (HRA) and is intended to be a simple exercise to address the question:

"is the project, either alone or in combination with other relevant projects and plans, likely to result in a significant [adverse] effect on the conservation objectives and integrity of the European site".

To address this question it is necessary to identify and consider the realistic and credible pathways / mechanisms by which the proposals may lead to an effect on the River Dee and Bala Lake SAC. The potential impacts from the project are now reviewed based on the Source, Pathway, Receptor Model. Please find below additional details with regards to the foul water discharge from the site.

6.2 Likely Significant Effect

Owing to the C-323/17 People Over Wind ruling the presence of inherent mitigation cannot be taken into consideration at Stage 1 (assessment of likely significant effect). If required, inherent mitigation can be during the appropriate assessment (i.e. Stage 2).

Natural Resources Wales have advised that the following types of non-agricultural development are unlikely to increase nutrient inputs, as there is unlikely to be a source of additional nutrient or pathway for impacts:

Type of Development	Comments	Criterion Satisfied
Any development that does not increase the volume and phosphorus concentration of wastewater	The proposal therefore represents a change in the type of accommodation provided (touring caravans to static caravans) rather than an intensification of the existing use, with no increase in the number of guests, residents or visitors accommodated on the site or changes to the foul drainage connections.	Yes
Any development that improves existing water quality discharges by reducing the phosphorus concentration of wastewater without increasing volume or by decreasing the volume of wastewater produced without increasing the concentration of phosphorus	Phosphate removal efficiency of the old septic tank was minimal. The package treatment plant has a significantly higher level of treatment and Phosphate removal than the old septic tank.	Yes
Developments intended to provide services, facilities, commercial sites, or places of employment (e.g., community buildings, schools etc.) for a local	A new package treatment plant sized to accommodate the full capacity of the caravan park has been installed, with the treated effluent continuing to	N/A

population already served by residential connections to existing public or private sewers discharging within the SAC river catchment	discharge to the existing outfall location.	
Any development that reduces the frequency, or volume of irregular phosphorus discharges within a SAC river catchment such as the erection of agricultural structures and drainage schemes to separate rainwater from manures and slurries by covering yards and existing manure/slurry stores. Note that any such development must not be linked to an increase in livestock numbers or the capacity for an increase in livestock numbers through provision of additional infrastructure	N/A	N/A
Increased phosphorus inputs to the River Dee and Bala Lake SAC will not occur as a result of the proposal and a likely significant effect on the SAC can be ruled out. This conclusion has been reached following consideration of Natural Resources Wales' current published advice.		

6.3 Summary of Likely Significant Effect

It has been identified that the proposals will not have an impact of the designation of the River Dee and Bala Lake as a SAC.

7.0 STAGE 2: INHERENT / EMBEDDED MITIGATION AND APPROPRIATE ASSESSMENT OF IDENTIFIED EFFECTS

7.1 Introduction

This sHRA, at the project level, must now assess the potential impacts of the proposals and how it may affect the River Dee and Bala Lake SAC. An assessment of whether the proposed development of the site alone, without mitigation measures, is "likely to have a significant effect" on the River Dee and Bala Lake SAC is presented.

Then, the relevant mitigation measures offered as part of the proposed development to address any "likely significant effects" of the proposed development alone are also explained. Taking into account any relevant mitigation measures, the assessment then considers whether the proposed development at the site will, alone, have any "likely significant effect" upon the River Dee and Bala SAC.

Following that, where necessary, any "in combination" effects with other existing drainage fields are considered. Conclusions are then reached as to whether the proposed development at the site is likely to have a significant effect on the River Dee and Bala Lake SAC either alone or in combination with any other drainage systems.

7.2 Without Mitigation

Any new developments, may result in an increase in Phosphates contained within water discharge. Most aquatic systems are naturally low in biologically available nutrients. So, when nutrient availability increases, aquatic plants tend to grow rapidly and cause degradation of water quality (e.g. algal blooms).

Increased sewage output could degrade the water quality (i.e. through increased phosphorus discharge) of the SAC, in the absence of environmental mitigation and adequate wastewater treatment works. However, the proposals do not result in an increase in the overall occupancy of the site. The holiday park currently operates with annual pitch holders occupying touring units on a seasonal and year-round basis, and the proposed development will retain the existing number of pitches and associated site users. The proposal involves a change in the type of accommodation provided, from touring caravans to static caravans, rather than an intensification of the existing use.

The pitches will remain serviced pitches, with the caravans directly connected to individual utility services. The pitches will have individual foul drainage connections; foul waste will then continue to be managed through the existing communal site facilities and private drainage infrastructure provided by the park operator.

Accordingly, the proposed development will not increase the number of guests, residents, or visitors accommodated on the site, nor will it introduce additional foul drainage connections or increase the overall loading on the site's wastewater management system. The proposal therefore represents a like-for-like continuation of the existing holiday park use, with a change in accommodation type only, and is not expected to result in an increase in sewage loading or a significant effect on the River Dee and Bala Lake SAC.

Therefore proposed development of the site alone, without mitigation measures, is *"likely to have no a significant effect"* on the River Dee and Bala Lake SAC.

7.3 With Mitigation

The proposed development has been designed to avoid an increase in phosphorus loading to the River Dee and Bala Lake SAC through the combination of retained accommodation capacity, improved wastewater treatment and additional catchment mitigation.

The proposal replaces 18 existing touring pitches with 18 static caravans. It does not introduce additional pitches, increase the maximum design population or extend the existing year-round operating period.

The existing caravan park is adults only and the touring pitches are used by annual pitch holders. These characteristics are important because the existing accommodation already benefits from established year-round use, rather than operating as a conventional seasonal touring facility.

The operator's reported occupancy figures indicate average annual utilisation of approximately 39.90% for touring caravans and 34.90% for existing static caravans. The existing static accommodation therefore has a lower reported utilisation rate than the touring accommodation. These figures provide site-specific evidence that the replacement of touring caravans with static caravans would not necessarily result in increased annual occupancy.

In addition, the former septic tank has been replaced by a Marsh Ultra Polylock 180PE PTP, which provides an improved standard of wastewater treatment. The quantitative nutrient budget indicates that, using the adopted phosphorus concentrations, the replacement treatment arrangement would reduce annual phosphorus loading by approximately 1.50 kg TP/year, equivalent to 16.40%, under equivalent annual occupancy conditions.

The sensitivity assessment demonstrates that the calculated treatment improvement could accommodate an increase in annual wastewater generation buffer of approximately 20% before phosphorus loading exceeds the estimated historical baseline. The 20% threshold represents the calculated buffer and this assessment therefore demonstrates the substantial environmental betterment associated with the replacement PTP.

Guidance recommends a 20% buffer to ensure the calculations are robust and precautionary. The 20% buffer accounts for uncertainties within the nutrient budget calculations and gives confidence that mitigation of the nutrient budget will remove the risk of adverse effects on site integrity in the River Dee and the Bala Lake SAC.

The proposal also incorporates additional mitigation through planting to reduce phosphorus losses within the catchment. Taken together, these measures provide a clear strategy for avoiding an increase in phosphorus loading associated with the development.

The site-specific occupancy evidence does not indicate that a substantial increase in annual utilisation is an inevitable consequence of the proposed change in accommodation type. The improvement in wastewater treatment provides further capacity to accommodate increased utilisation, while the committed land-use mitigation provides an additional mechanism for reducing phosphorus inputs.

The proposed development of the site alone, with mitigation measures, is *"likely to have no significant effect"* on the SAC.

It is advised that the incorporation of the measures into the development proposal and scheme design and the inclusion of the additional mitigation / preventative measures enable Wrexham Borough County Council to conclude under the Habitats Regulations that there is no adverse effect on the integrity and conservation objectives of the River Dee and Bala Lake SAC (or any designated site) as a result of the development proposals.

7.4 In Combination Effects

It is a requirement of HRA screening assessments that they take into account possible 'in-combination' (cumulative) effects on European sites that could arise from other relevant developments. It is possible that a number of small impacts, while not considered to cause harm when assessed in isolation, could combine to cause a more significant effect. In combination effects (i.e. is the project, in combination with other relevant projects likely to result in a significant [adverse] effect on the conservation objectives and integrity of the European site) only need to be considered if a likely significant effect of the project when considered alone is discounted, as is the case with the site proposals.

It is understood that there are no discharge to ground within 200m of the site and the density of discharge is lower than 1 per hectare (25 per km^2). The distances are considered too great a distance to be impacted by issues of polluted runoff from the site.

Inherent on-site mitigation to avoid a significant impact / adverse effect on the integrity of the designated sites as a result of Phosphate discharge will be achieved as part of the design of the proposed development.

The proposed development of the site in combination, with mitigation measures, is *"likely to have no significant effect"* on the River Dee and Bala Lake SAC.

It is advised that the incorporation of the measures into the development proposal and scheme design and the inclusion of the additional mitigation / preventative measures will enable Wrexham Borough County Council to conclude under the Habitats Regulations that there is no adverse effect on the integrity and conservation objectives of the River Dee and Bala Lake SAC (or any designated site) as a result of the development proposals in combination.

8.0 CONCLUSION

The proposals deliver a neutral scheme that is achieved by not increasing the levels of nutrients. The proposal as described above would result in a Nutrient Neutral Development It is therefore safe to conclude the that proposals, will not give rise to any likely significant effects upon the River Dee and Bala Lake SAC either alone or in combination.

The existing touring pitches have an estimated annual utilisation of approximately 39.90%, compared with approximately 34.90% for the existing static caravans. These figures do not support an assumption that static caravan accommodation will necessarily experience greater annual utilisation.

The replacement of the former septic tank with a Marsh Ultra Polylock 180PE PTP provides an improved wastewater treatment arrangement. The quantitative assessment indicates an estimated reduction in phosphorus loading of approximately 16.4% under equivalent annual occupancy conditions.

The sensitivity assessment indicates that the treatment improvement could offset an increase in annual wastewater generation buffer of approximately 20% before phosphorus loading exceeds the historical baseline. The 20% threshold represents the calculated buffer and this assessment therefore demonstrates the substantial environmental betterment associated with the replacement PTP.

The development will also incorporate additional mitigation through planting providing further opportunities to reduce phosphorus losses within the catchment.

The proposals therefore passes the legal tests that protect European sites which states: *"Is the proposal likely to have a significant effect on the internationally important interest features of the site, alone or in combination with other plans and projects?"* The answer to which is no therefore, permission may be granted.

APPENDICES

APPENDIX 1 – Site Layout including PTP Location and Discharge Point

Knolton

EXISTING MARSH ULTRA POLYLOCK 180PE PACKAGED TREATMENT PLANT CONNECTED TO MAINS DRAINAGE SYSTEM

88.7m

Dalesman

Ty Newydd

TREATMENT PLANT CONNECTS TO ROADSIDE DRAIN WITH A DISCHARGE TO ENGLAND

Static caravan pitches

Touring caravan pitches

NOTE:EXISTING TOURING PITCHES TO BE FULLY RETAINED WITH GRAVEL AND DECORATIVE PLANTING FOR USE BY STATIC CARAVANS

OVERFLOW PARKING

Trotting Mare Barn

FOUL DRAIN RUN

The Trotting Mare (PH)

Existing static caravn park

Solar Panels

Trotting Mare Cottage

1.22m RH

87.3m

BS

WALES

ENGLAND

Trotting Mare Caravan Park

Static caravan pitches

1.22m RH

Track

A 528

Def

Pond

Pond

Pond



WOODCRETE BIRD BOX



BAT BOX

0m 5 10 15 20

Halls 1845

NOTES
Anydiscrepancies found should be immediately communicated to the designer for further consideration. Any boundaries shown on the drawing are indicative only and should not be used to signify ownership

DO NOT SCALE FROM THIS DRAWING

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LICENCE NUMBER 100055041.

N

WALES / ENGLAND BORDER

FOUL DRAIN RUN

PROPOSED NEW STATIC CARAVANS
APPROX SIZE 11m x 3.65m
18No.

SITE AREA 0.375 ha

Rev.	Comments	Drawn	Date
A	EXISTING TREATMENT PLANT MAKE AND MODEL SHOWN	GMN	19.02.26

Agent

Halls Holdings Ltd
Halls Holdings House
Bowman Way
Battlefield
Shrewsbury
SY4 3DR
Tel: 01743 450700
Fax: 01743 443759
web: www.hallsgb.com

Project

REPLACEMENT OF 18No. TOURING PITCHES WITH 18No. STATIC CARAVANS AND ALL ASSOCIATED WORKS

Site Address

TROTTING MARE CARAVAN PARK
GRANGE ROAD
OVERTON
LL13 0LE

Client

MR.G.MILLINGTON

Contact

LYNDSEY FISHER
lyndsey.fisher@hallsgb.com

Title

PROPOSED SITE PLAN

Drawn by

GEORGE NUTTER
gerorgen@hallsgb.com

Status

PLANNING

Scale	Date
1:500@A1	31.01.2025

Dwg. No.	Rev.
12588D - 02	A

APPENDIX 2 – Marsh Ultra Polylock 180PE PTP Specifications

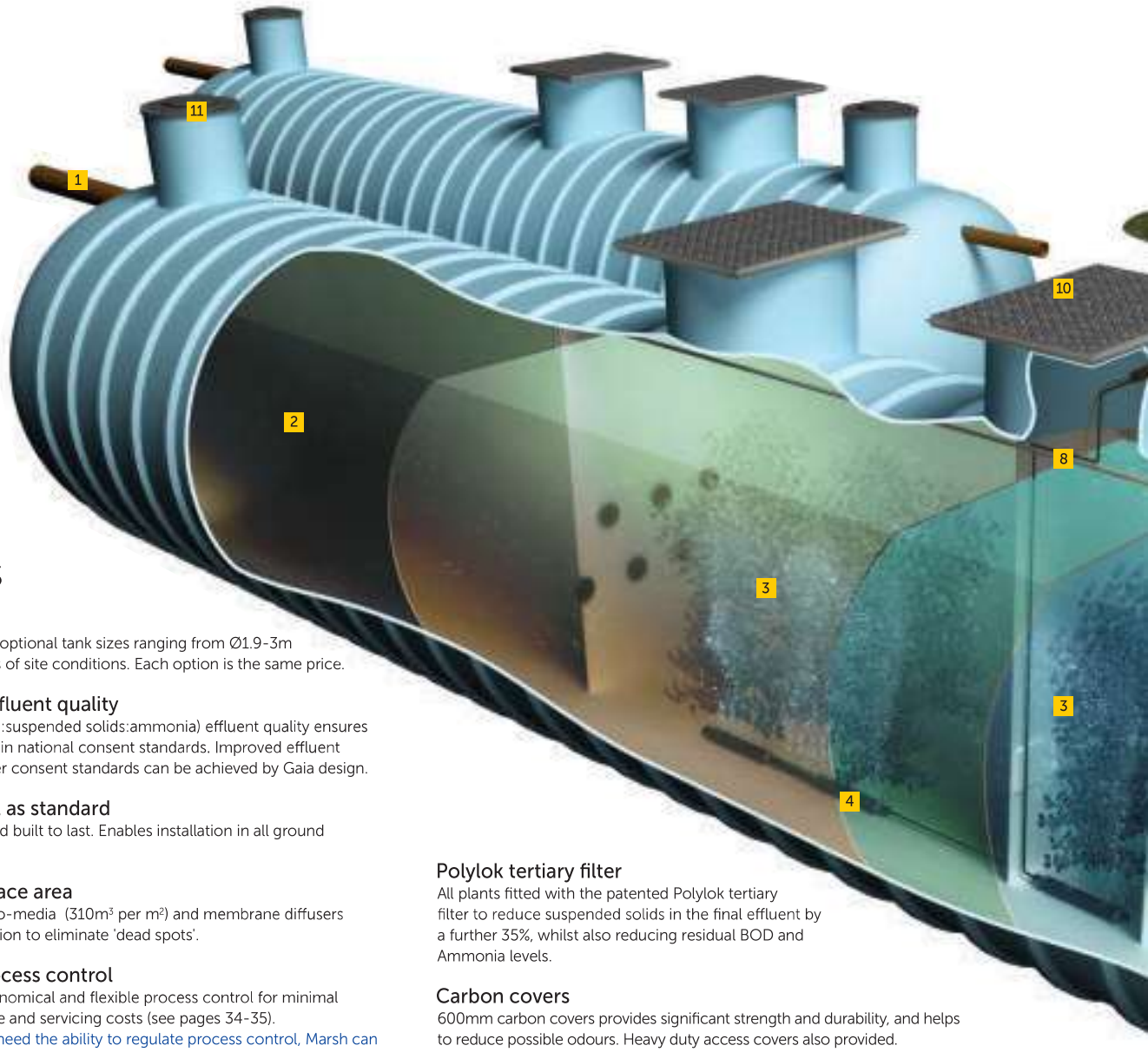
Ultra:Polylok™
Sewage treatment plants
Advanced biological processing for off-mains wastewater

Overview

Marsh Ultra Polylok sewage treatment systems provide advanced biological treatment to off-mains wastewater on sites ranging from 50-500PE.

The units are ideally suited for large residential, commercial, industrial and leisure sites - particularly where onerous consent standards preclude the use of standard 'off the shelf' units.

Proven reliability of the simple but effective Submerged Aeration Filtration (SAF-MBBR) system offers both operating and financial benefits when compared to more complex alternatives that require frequent servicing and maintenance to sustain performance.



Benefits

Plant sizing
Bespoke design with optional tank sizes ranging from Ø1.9-3m satisfies the demands of site conditions. Each option is the same price.

Class-leading effluent quality
20:30:20mg/ltr (BOD:suspended solids:ammonia) effluent quality ensures discharge is well within national consent standards. Improved effluent quality to meet tighter consent standards can be achieved by Gaia design.

Heavy duty shell as standard
Structurally sound and built to last. Enables installation in all ground conditions.

High media surface area
High specification bio-media (310m^3 per m^2) and membrane diffusers provide even circulation to eliminate 'dead spots'.

Eco-friendly process control
Energy-efficient, economical and flexible process control for minimal running, maintenance and servicing costs (see pages 34-35).
For sites that do not need the ability to regulate process control, Marsh can offer diaphragm compressors for sewage treatment plants up to 150PE

Internal recirculation
Continues the treatment process to provide higher effluent quality whilst balancing flow over 24 hour period or periods of intermittent use.

Polylok tertiary filter
All plants fitted with the patented Polylok tertiary filter to reduce suspended solids in the final effluent by a further 35%, whilst also reducing residual BOD and Ammonia levels.

Carbon covers
600mm carbon covers provides significant strength and durability, and helps to reduce possible odours. Heavy duty access covers also provided.

Optional extras
Optional extras include extensions for deep installations, pumped outlets for sites with adverse levels, sample chambers, Degrilleur trash barriers, phosphate reduction and UV treatment chambers.

Key

1 Inlet
2 Primary chamber
3 Aeration chambers
4 Air diffusers
5 Final (or 'humus') chamber
6 Polylok filter
7 Outlet
8 Recirculation to primary chamber
9 Turret guard
10 Heavy duty access covers
11 Carbon covers
12 High level alarm
13 Eco-friendly process contol
14 Control kiosk



This is not a typical tank installation. Configuration and components are shown for illustration purposes only

Tank sizing

Developed by Marsh Industries, the unique Gaia Sege process design software uses core information to accurately calculate and tailor key variables ensuring total system optimisation for individual applications.

These precise calculations provide assurance to consultants, engineers, specifiers and contractors that the system is specifically designed to meet the appropriate standards of regulatory bodies.

For Ultra:Polylok sewage treatment plants, the software uses established core process equations to accurately calculate and tailor key variables ensuring total processing optimisation for Biological Oxygen Demand (BOD), Total Suspended Solids (TSS) and Ammonia (NH_4) reduction and removal.

Gaia Sege software also uses 'British Water Flows & Loads' data to calculate initial flows and loadings whilst also calculating peak flows and levels.

The programme can also calculate accurate sludge generation and storage on a daily basis, dependent upon final effluent standards required, ensuring the optimisation of primary chambers, individual clarifiers, diffused oxygen feed and final settlement chamber.

GRP kiosks

Marsh GRP kiosks provide safe and secure storage of electrical control panels and other tank monitoring equipment.

The kiosks are typically fitted with one or two doors, depending on kiosk size, with stainless steel vents and yale locks.



Energy-efficient, **economical** and **flexible** process control for Ultra:Polylok™ sewage treatment plants

Efficiency

Air blower speed/output is controlled using a variable speed 'drive' which supplies the precise amount of air required to enable the sewage treatment plant to function efficiently.

Optimisation of the air blower output results in improved running costs, meaning the end-user can be assured they have the most economical solution for their wastewater system.

This is a unique feature when it comes to overall energy-efficiency as most process control kiosks currently available within the industry have a one size fits all approach.

Flexibility

These next-generation process control kiosks are built with flexibility in mind. Additional control options can be programmed into the 'drive' to regulate the volume of air delivered to the sewage treatment plant for different periods. This can be particularly beneficial for seasonal applications such as campsites, caravan parks, lodges or hotels where they may operate at peak capacity for short periods of the year. This functionality permits the volume of air to be increased or reduced, depending on the amount of people to be accommodated, thereby offering the end-user the ability to further reduce energy and running costs.

In addition, the process control kiosk allows for system expansion in the case of business/site growth (subject to design), thus eliminating the need to install extra tanks, pipework, air blowers, etc.



Noise reduction

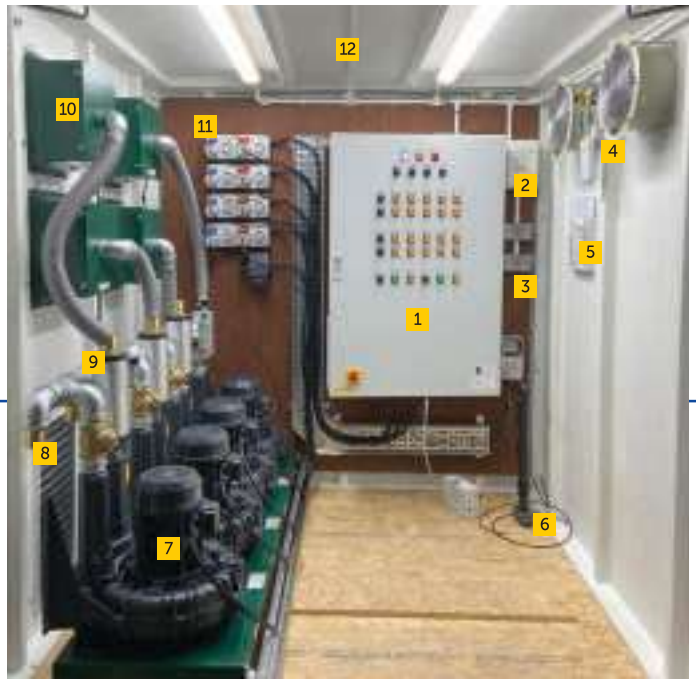
We believe these kiosks to be the quietest on the market today. They are fitted with a number of noise reduction measures as standard, making them ideal for caravan parks, campsites, etc, subject to kiosk placement/location. This can reduce the need for creating barriers or planting to restrict noise.

Further noise reduction measures can be added through the use of acoustic PUNF foam linings and various acoustic noise absorbing baffles. This not only reduces noise but enables the kiosk to be placed in a more convenient location on sites where space is at a premium (the recommended distance from the sewage treatment plant should be 10m).

Specification/costs of noise reduction options, including measured decibel levels at a given distance from the kiosk, can be supplied on request.

Features

- Powder coated, mild steel or GRP kiosk (Green - RAL6005)
  The kiosk protects the motor and controls from the elements
- Forced ventilation, including ambient temperature control
  A ventilation fan/thermostat maintains the optimal ambient temperature in accordance with the air blower manufacturer's specifications
- Thermal protection on motors
  Protects the motor windings from overheating, increasing the reliability and lifespan of the motor
- Electrical overload and short circuit protection
  As required by electrical regulations
- Air intake filter maintenance alarm
  Alerts the end-user when the intake filter needs cleaning/replacing
- High pressure alarm
  Alerts the end user if the system design pressure has been exceeded, typically suggesting a blockage or restriction in the pipework
- Low pressure alarm
  Alerts the end user if the system design pressure is low, typically suggesting a leakage in the pipework
- Standard acoustic attenuation including air intake silencer and external acoustic hood
  Reduces noise from the blower motor and air intake



Main components required on the system for illustration purposes only

Key

1 Electrical control panel
2 Kiosk lighting and power DB
3 230v RCD sockets
4 Kiosk ventilation fans/thermostat control box
5 Electrical panel drawings and documents
6 Test equipment (for use when commissioning)
7 Aeration blowers
8 Pipe manifold including 50mm outlets and return valves
9 Air intake silencer
10 Aeration blower intake filter
11 Blower power and control outlets
12 Kiosk lighting

Specifications

Ultra:Polylok		Kiosk					
Model	People served	Height	Width	Depth	Power rating Kw	Recommended electrical supply 230v	Recommended electrical supply 400v
UP55	55	1350	850	500	0.8	230v SP&N 16A type C/D MCB	400v TP&N 10A type C/D MCB
UP75	75	1350	850	500	0.8	230v SP&N 16A type C/D MCB	400v TP&N 10A type C/D MCB
UP100	100	1350	850	500	1.1	230v SP&N 20A type C/D MCB	400v TP&N 16A type C/D MCB
UP125	125	1350	850	500	1.1	230v SP&N 20A type C/D MCB	400v TP&N 16A type C/D MCB
UP150	150	1350	850	500	1.1	230v SP&N 20A type C/D MCB	400v TP&N 16A type C/D MCB
UP175	175	1350	850	500	1.1	230v SP&N 16A type C/D MCB	400v TP&N 16A type C/D MCB
UP200	200	1350	850	500	1.5	230v SP&N 25A type C/D MCB	400v TP&N 20A type C/D MCB
UP225	225	1350	850	500	1.5	230v SP&N 25A type C/D MCB	400v TP&N 20A type C/D MCB
UP250	250	1350	850	500	2.2	230v SP&N 40A type C/D MCB	400v TP&N 32A type C/D MCB
UP275	275	1350	850	500	2.2	230v SP&N 40A type C/D MCB	400v TP&N 32A type C/D MCB
UP300	300	1350	850	500	3.0	230v SP&N 50A type C/D MCB	400v TP&N 40A type C/D MCB
UP325	325	1450	950	500	3.0	230v SP&N 50A type C/D MCB	400v TP&N 40A type C/D MCB
UP350	350	1450	950	500	3.0	230v SP&N 50A type C/D MCB	400v TP&N 40A type C/D MCB
UP375	375	1450	950	500	3.0	230v SP&N 50A type C/D MCB	400v TP&N 40A type C/D MCB

Notes:
> *The dimensions given on this page are for guidance only*
> *For precise kiosk and Ultra:Polylok sewage treatment plant sizes and configurations, please contact Marsh Industries*
> *All dimensions in mm*

Maintenance

Our engineers will advise of the appropriate maintenance plan once the site installation has been completed, however the process controls installed within the kiosk are designed to alert you to any imminent maintenance required on the system.

Installation

All kiosks are supplied fully assembled, tested and ready for installation. An electrical supply/connection to the kiosk should be all that is required on site (electrical supply requirements will be supplied upon kiosk specification).



01686 668957 • info@krsenviro.com • www.krsenviro.com