PROJECT:	CHANGE OF USE OF LAND TO A 3 PITCH FAMILY GYPSY & TRAVELLER SITE, ALONG WITH THE STABLING OF HORSES LAND TO THE NORTH OF BRYMBO ROAD, BWLCHGWYN, WREXHAM. LL11 5TY.
CLIENT:	MR S EVANS
PLANNING AGENT:	Mr. M. Carr MSc MRTPI
DESIGN ENGINEERS:	PKL CHARTERED BUILDING CONSULTANCY
DATE:	JULY 2026
REVISION:	-

PACKAGE SEWAGE TREATMENT PLANT DETAILS

MARSH GEMINI ™ COMBINED SBR AND PHOSPHATE REDUCTION PLANT

Combining the Marsh Nutra-Lite and Marsh Phos-Lite for compact sewage treatment, phosphate and nitrate removal

To reduce the footprint of a two-chamber system, Marsh Industries offers the Marsh Gemini, an ‘all-in-one’ solution that combines the Marsh Nutra-Lite SBR and the Marsh Phos-Lite into one single unit.

The Gemini is available for sites catering up to 16 people.

Enhanced effluent quality

The Gemini achieves the following overall effluent quality through its combination of the fully certified and tested Nutra-Lite and Phos-Lite systems:

BOD: 1.62 mg/l
TNb: 10.5 mg/l
NH_4n: 0.38mg/l
Ptot: 0.26 mg/l
SS: 4.3 mg/l

The two-chamber approach is fully approved by PIA, with the technical and hydraulic features of the EN12566-3-certified Nutra-Lite and the EN12566-7-certified Phos-Lite remaining the same in this integrated unit

Key Features

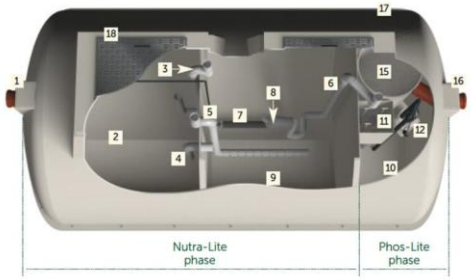
A unique, two-in-one system - The Marsh Gemini enables a compact installation when both of our market-leading natural solutions, Nutra-Lite and Phos-Lite, are required. It also offers adaptability in tank diameters to suit specific site ground conditions.

This single unit houses the two certified systems: Nutra-Lite and Phos-Lite. The Nutra-Lite provides advanced Sequential Batch Reactor (SBR) sewage treatment, while the Phos-Lite further enhances effluent quality and supports the achievement of challenging phosphate reduction targets.

KEY

1. Inlet
2. Primary chamber
3. Inflow air-lift pipework
4. Overflow pipework
5. Recirculation air-lift pipework
6. Outflow air-lift pipework
7. Air diffuser
8. Sediment reduction valve
9. Secondary chamber
10. Setlement chamber
11. Filter socks
12. Flow control valve
13. Submersible pump
14. Pipework outflow (beneath lower shelf)
15. Phos-Pellet chamber
16. Outlet
17. Heavy duty GRP shell
18. Access cover





Phosphate reduction without chemical dosing

Marsh Phos-Lite is a groundbreaking product designed to efficiently remove phosphate from wastewater.

Utilising a unique adsorption process, Phos-Lite binds phosphorus to the surface of its media, which is composed of naturally occurring elements. This ensures long-term performance across varying flow rates and influent concentrations.

Recommended for up to 35PE (population equivalent), Phos-Lite is fully scalable to meet larger demands.

Achieves phosphate levels of 0.2mg/l

The plant is engineered for maximum retention time, guaranteeing stable, low effluent phosphorus concentrations certified by PIA GmbH at 0.2mg/l.

Economic and efficient

With an electrical consumption of just 0.03 kWh/d, Phos-Lite operates at very low cost.

System flexibility

CIOB Company Member

This innovative tertiary treatment solution seamlessly connects to the outlet of both new and existing treatment plants.

Enhanced effluent quality

Phos-Lite not only excels in phosphate removal but also significantly reduces other key effluent constituents.

The Marsh Nutra-Lite treats effluent to the following standards:

BOD: 4mg/ltr

Suspended Solids: 11mg/ltr

Ammonia: 0.5mg/ltr

When the Marsh Nutra-Lite and Marsh Phos-Lite are combined, the effluent quality is further improved to:

BOD: 1.62mg/ltr

Suspended Solids: 4.3mg/ltr

Ammonia: 0.38mg/ltr

PTot: 0.26mg/ltr

TNb: 10.5mg/ltr

Test results achieved when the Marsh Ensign:EL and Marsh Phos-Lite are combined is as follows:

COD | 56.1% | 23 mg/ltr

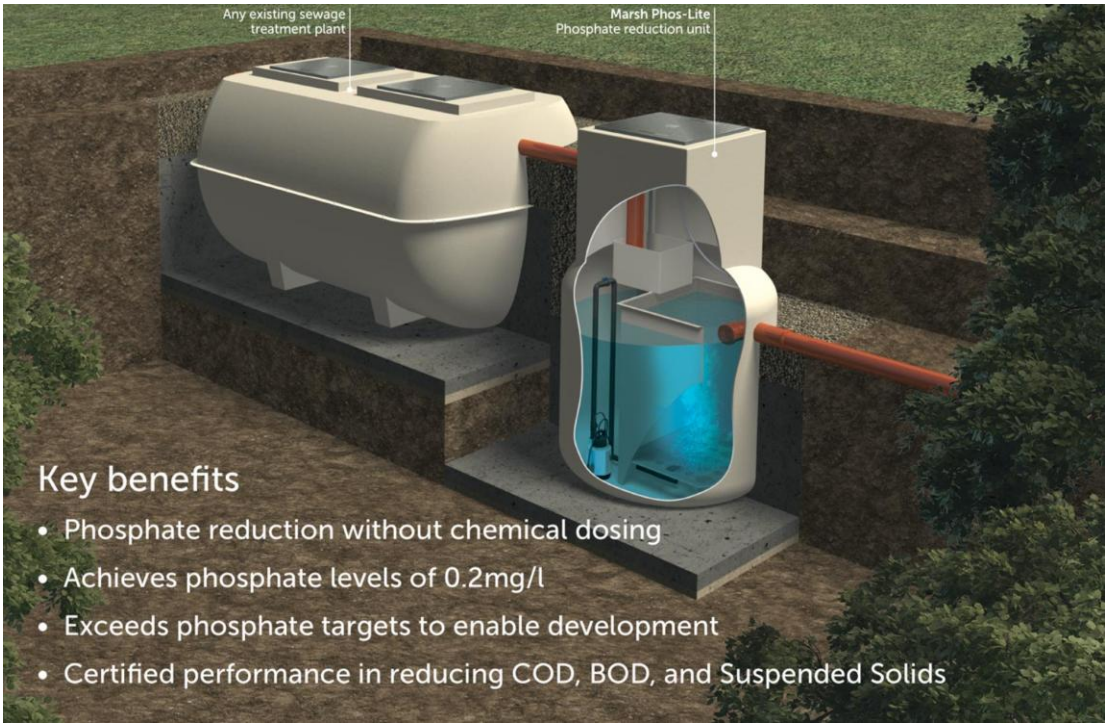
BOD | 59.5% | 4 mg/ltr

TNb | 5.5% | 26.5 mg/ltr

NH4n | 24% | 0.4 mg/ltr

Ptot | 95.9% | 0.2 mg/ltr

SS | 61.1% | 4 mg/ltr


Any existing sewage treatment plant
Marsh Phos-Lite Phosphate reduction unit
Key benefits
• Phosphate reduction without chemical dosing
• Achieves phosphate levels of 0.2mg/l
• Exceeds phosphate targets to enable development
• Certified performance in reducing COD, BOD, and Suspended Solids