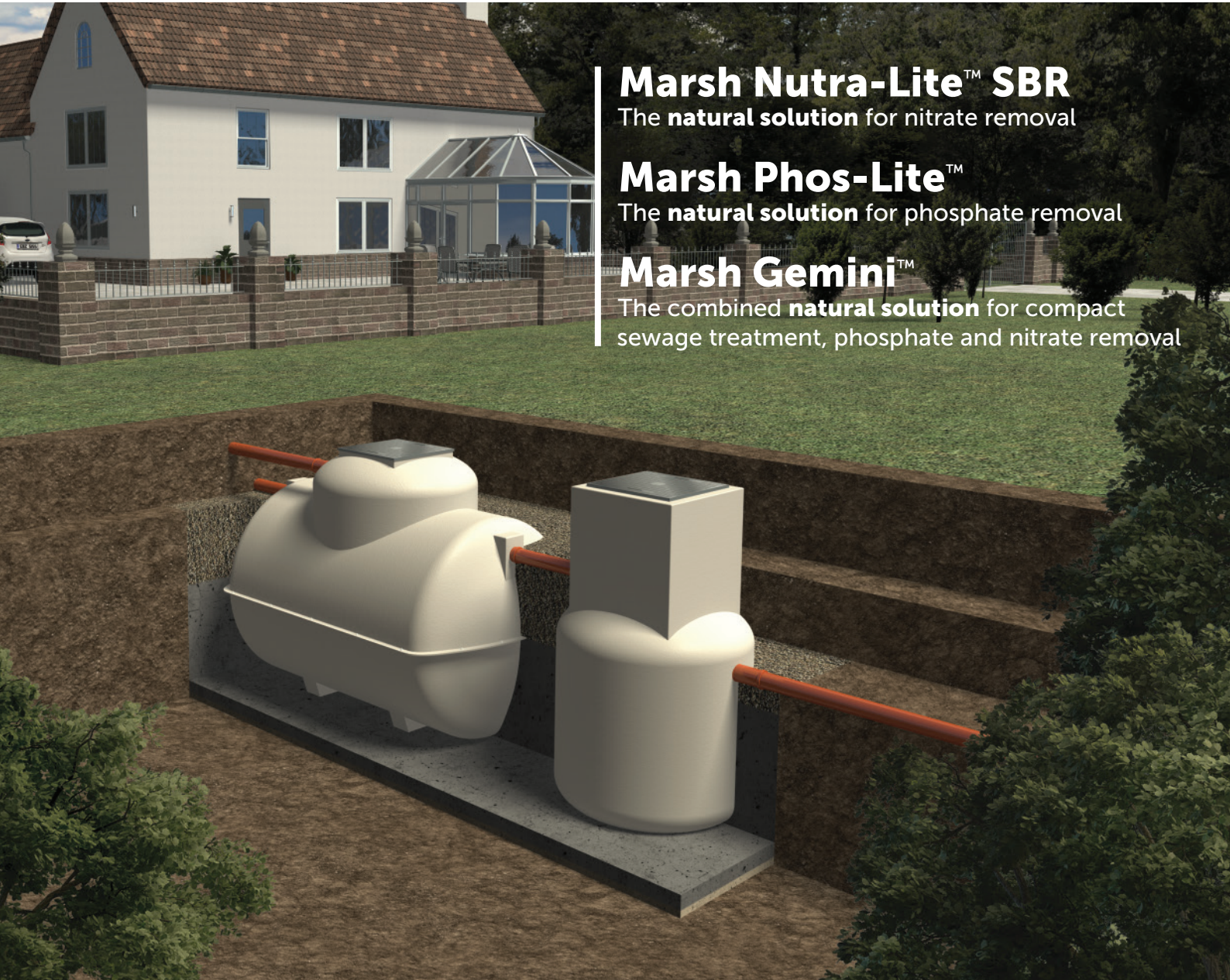


Marsh Natural Solutions™

For phosphate and nitrate reduction



Marsh Nutra-Lite™ SBR

The **natural solution** for nitrate removal

Marsh Phos-Lite™

The **natural solution** for phosphate removal

Marsh Gemini™

The combined **natural solution** for compact sewage treatment, phosphate and nitrate removal

 **MADE IN
BRITAIN**®

Environmental compliance
without chemical dosing



Marsh Nutra-Lite SBR

The **natural solution** for advanced sewage treatment, phosphate and nitrate removal



Marsh Nutra-Lite SBR
Advanced sewage treatment plant



Key benefits

- 84% biological reduction of nitrates
- Exceeds nitrate targets to enable site development
- Certified performance in reducing COD, BOD, and Suspended Solids

Certificate

PIA

Mil Nutra-Lite

Plant with aeration stage in downstream Push Reactor SBR and primary sedimentation

Marsh Nutra-Lite Limited
Units 3 & 4 Adlington Park Industrial Estate, 18000 460, West Wales, UK

BS 12036:2006 (EN 12036), Annex B. Treatment efficiency and Small wastewater treatment systems for up to 50 p.p.e. Part 2. Full range and/or for conventional domestic wastewater treatment plants

Final effluent details and the location of the test are provided in test report PAS004-03006.

TREATMENT EFFICIENCY DETAILS (BS 12036:2006 & Annex B. Treatment efficiency level)		
Digested Aroclor content, maximum	0.20 mg/100 l/l	
Residual Aroclor content	0.001%	20 mg/l
Treatment efficiency (minimum)		
COD	95.0 %	20 mg/l
BOD ₅	95.0 %	20 mg/l
SS ₁₂	95.0 %	12.5 mg/l
NH ₄ -N	95.0 %	0.5 mg/l
PO ₄ -P	95.0 %	0.2 mg/l
NO ₃ -N	97.0 %	25 mg/l

Electrical consumption (maximum)
Number of start-ups (20 weeks testing) (EN 12036 in normal distribution)
Number of maintenance operations during the test (normal start-up process)

Tested for compliance: 12/17. 1/18 (maximum)

Issued by:
PIA - Pflanzlich & Altschneiders GmbH
Department: Pflanzlich
18275, Aachen, Germany

PIA logo and other certification details.

SBR technology for superior nitrate reduction

Overview

Marsh Industries proudly presents the Marsh Nutra-Lite, an advanced Sequential Batch Reactor (SBR) sewage treatment plant designed to enhance effluent quality for off-mains wastewater systems and significantly reduce biological nitrates.

The Nutra-Lite is available in capacities catering to sites for up to 50 people, with state-of-the-art technology and rigorously tested, the Nutra-Lite sets a new standard for sustainable wastewater management.

Can be supplied as a complete system, combined with the Marsh Phos-Lite. See page 5 for Phos-Lite details.

Features

Outstanding discharge quality

The Nutra-Lite boasts the highest overall discharge quality of any plant available today. A unique self-cleaning, self-sealing sediment reduction valve ensures total control over suspended solids. No mechanical parts provide reliability and efficiency.

Nutra-Lite not only excels in phosphate and nitrate removal but also significantly reduces other key effluent constituents:

COD	95.8%	33mg/l
BOD	98.7%	4 mg/l
TN _b	83.9%	11.1mg/l
NH ₄ n	99.1%	0.5mg/l
P _{tot}	34.3%	6mg/l
SS	97.1%	11mg/l

SBR technology for superior nitrate reduction

The Nutra-Lite harnesses SBR technology, achieving an impressive 84% biological reduction in nitrates. Unlike traditional methods, no chemicals or carbon are used – just biological processes.

Remote configuration and adaptability

Unique to Marsh Industries, the Nutra-Lite can be adapted to seasonal changes in biological treatment, ensuring optimal year-round performance. Remote configuration allows adjustments based on ongoing nitrate reduction research.

Secure telemetry and alarm monitoring

All Nutra-Lite plants feature bi-directional communication for maintenance and monitoring. Telemetry options include mobile connectivity or homeowner Wi-Fi/internet.

Efficiency and cost savings

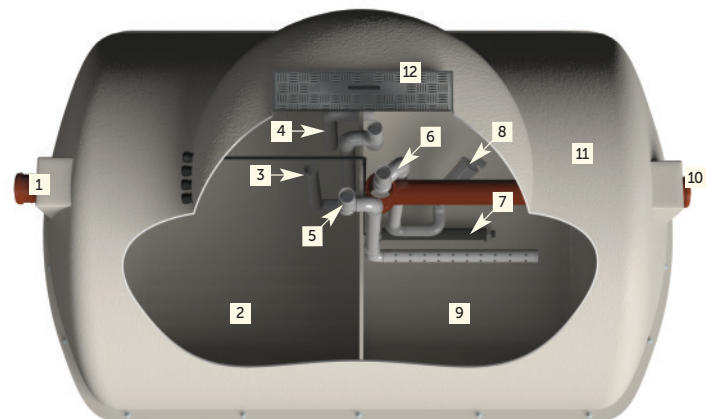
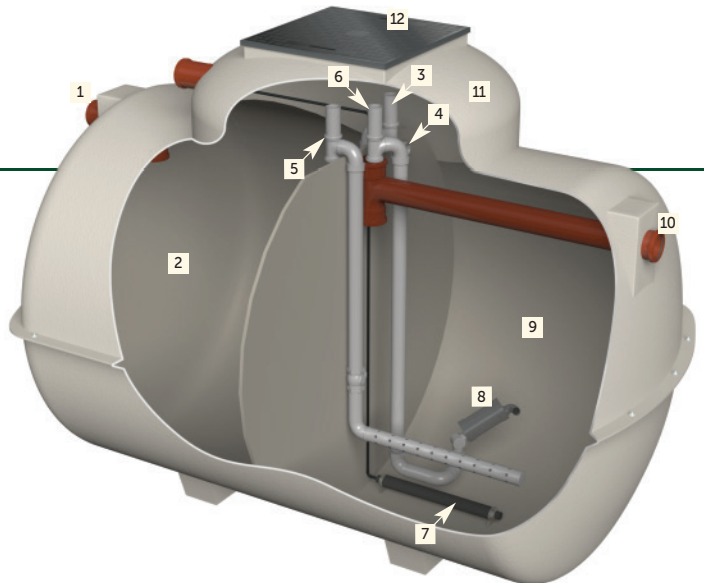
A single compressor minimises electrical power consumption without compromising performance. Economy mode further reduces running costs during process changeovers.

Certified performance

Rigorously tested at the world-leading notified test centre, PIA GmbH, in Aachen, Germany, the Nutra-Lite is certified to BS EN 12566-3 after 50 weeks of continuous testing. This system holds accreditation to EN12566-3 Annex B for systems of up to 50 Population Equivalent (PE) and complies with the UK Forward for BSEN12566-3, demonstrating its reliability and effectiveness.

Material strength and fire safety

Marsh Industries' GRP material successfully meets the requirements of EN ISO 11925-2:2010 standards and is tested for direct flame impingement. All units come with a 25-year structural guarantee.



Key

- | | |
|-----------------------------------|----------------------------|
| 1 Inlet | 7 Air diffuser |
| 2 Primary chamber | 8 Sediment reduction valve |
| 3 Inflow air-lift pipework | 9 Secondary chamber |
| 4 Overflow pipework | 10 Outlet |
| 5 Recirculation air-lift pipework | 11 Heavy duty GRP shell |
| 6 Outflow air-lift pipework | 12 Access cover |

Specifications

Model (Pop)	PE	Length +/-50mm	Width +/-50mm	Height +/-50mm	Inlet		Outlet	
					Invert	Ø	Invert	Ø
NL6	4-6PE	2602	1680	1865	550	110	625	110
NL10	7-10PE	2862	1952	2139	550	110	625	110
NL16	11-16PE	3612	1952	2284	600	110	675	110
NL20	17-20PE	4252	1952	2284	600	110	675	110
NL25	21-25PE	5252	1952	2284	600	110	675	110

Marsh Phos-Lite

The **natural solution** for phosphate removal

Addressing critical environmental concerns

Phosphate pollution leads to harmful algal blooms that deplete oxygen and disrupt aquatic ecosystems. Marsh Industries' state-of-the-art Phos-Lite system reduces phosphate levels to 0.2mg/l, far exceeding current standards. This solution was rigorously tested and certified at PIA GmbH test facility in Aachen, Germany.

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



Innovative technology for cleaner water

Overview

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

With an electrical consumption of just 0.03 kWh/d, Phos-Lite operates at very low cost. This innovative tertiary treatment solution seamlessly connects to the outlet of both new and existing treatment plants.

Features

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 combined with the Marsh Ensign:EL		
COD	56.1%	23 mg/l
BOD	59.5%	4 mg/l
TNb	5.5%	29.6 mg/l
NH4n	24%	0.4 mg/l
Ptot	95.9%	0.2 mg/l
SS	61.1%	4 mg/l

Long-term performance

Designed to retain up to 8.5kg of phosphorus in a 6PE domestic plant (British Water Flows and Load 4), the Marsh Phos-Lite offers reliable performance. Media performance will be assessed at pre-determined intervals and replaced if necessary. The longevity of the media will be influenced by the actual flows and loads entering the plant.

Natural, non-dosing solution

The plant uses Phos-Lite pellets, a natural mineral media, to reduce phosphate levels, simplifying operations and reducing the environmental impact of chemical use.

Cost-effective and low maintenance

The non-dosing approach minimises the need for frequent maintenance and chemical adjustments, leading to cost savings over the plant's lifetime.

Enhanced compliance

By achieving phosphate levels of 0.2mg/l, the plant ensures compliance with environmental standards, allowing water companies to meet regulatory obligations.

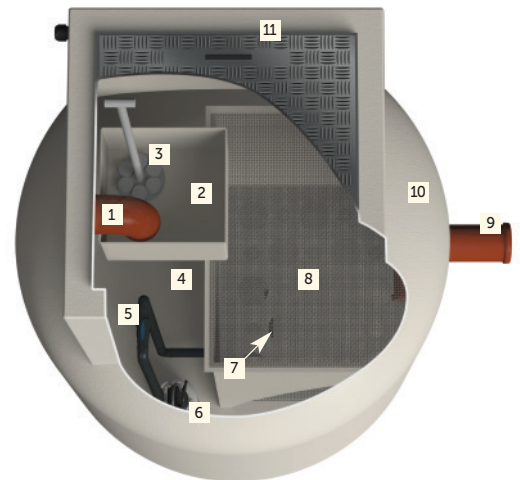
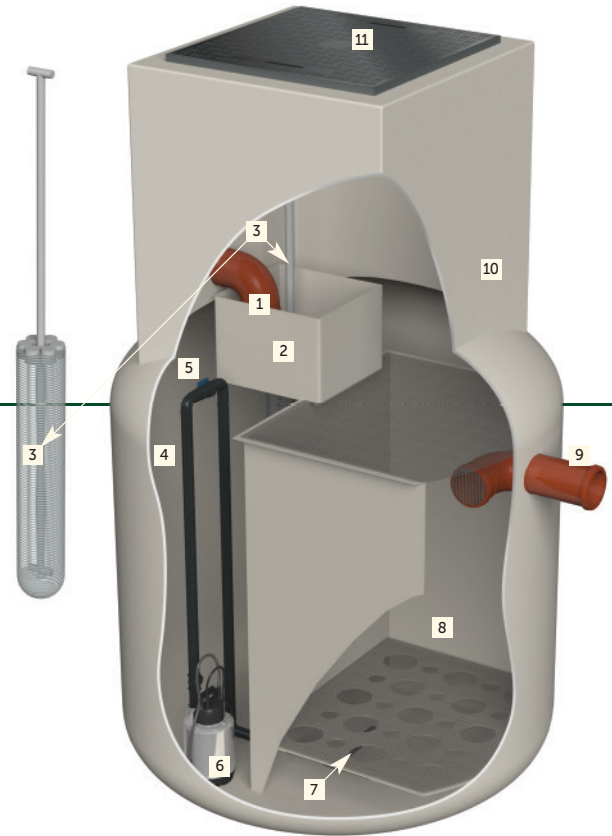
Ease of integration

The plant is designed for seamless integration into existing systems, making it versatile for new installations and retrofits. Builders' merchants will find this product a valuable addition to their offerings, catering to the growing demand for environmentally responsible wastewater treatment solutions.

Material strength and fire safety

Marsh Industries' GRP material successfully meets the requirements of EN ISO 11925-2:2010 standards and is tested for direct flame impingement. All units come with a 25-year structural guarantee.

Tank configurations and components are shown for illustration purposes only



Key

- | | |
|----------------------|--|
| 1 Inlet | 6 Submersible pump |
| 2 Inlet chamber | 7 Pipework outflow (beneath lower shelf) |
| 3 Filter sock | 8 Phos-Pellet chamber |
| 4 Primary chamber | 9 Outlet |
| 5 Flow control valve | 10 Heavy duty GRP shell |
| | 11 Access cover |

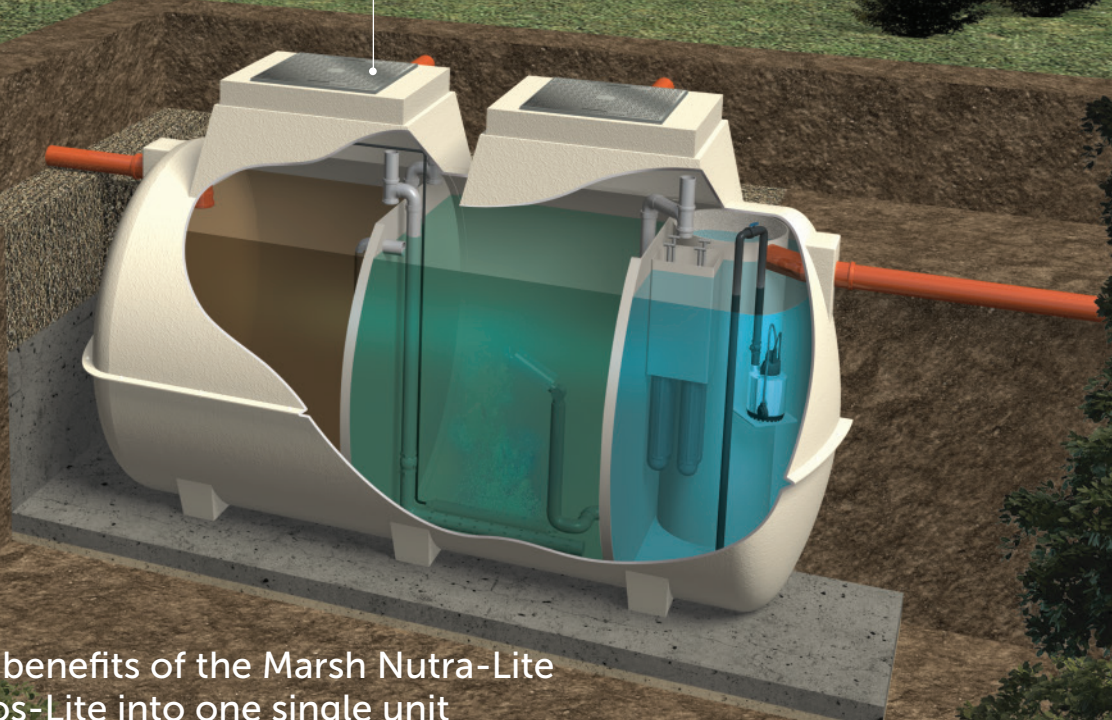
Specifications

Model	PE	Dia Ø +/-50mm	Height +/-50mm	Inlet		Outlet	
				Invert	Ø	Invert	Ø
PL4	4PE	1200	1865	665*	110	1085	110
PL6	6PE	1200	1865	665*	110	1085	110
PL8	8PE	1200	2139	665*	110	1085	110
PL10	10PE	1200	2139	665*	110	1085	110
PL12	12PE	1500	2284	715*	110	1085	110
PL16	16PE	1500	2284	715*	110	1085	110
PL20	20PE	1500	2284	715*	110	1085	110
PL25	25PE	1500	2284	715*	160	1085	160

* Inlet invert subject to outlet invert on preceding sewage treatment plant

Marsh Gemini

The combined **natural solution** for **compact** sewage treatment, phosphate and nitrate removal



Marsh Gemini
Sequential Batch Reactor (SBR)
and Phosphate reduction system

Key benefits

- Combines the benefits of the Marsh Nutra-Lite and Marsh Phos-Lite into one single unit
- Smaller footprint to suit restrictive site conditions
- Exceeds effluent and phosphate reduction targets

Combining the Marsh Nutra-Lite and Marsh Phos-Lite

Overview

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

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

Features

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.

Nutra-Lite significantly reduces biological nitrates through state-of-the-art technology and has been rigorously tested, boasting the highest overall discharge quality of any plant available today.

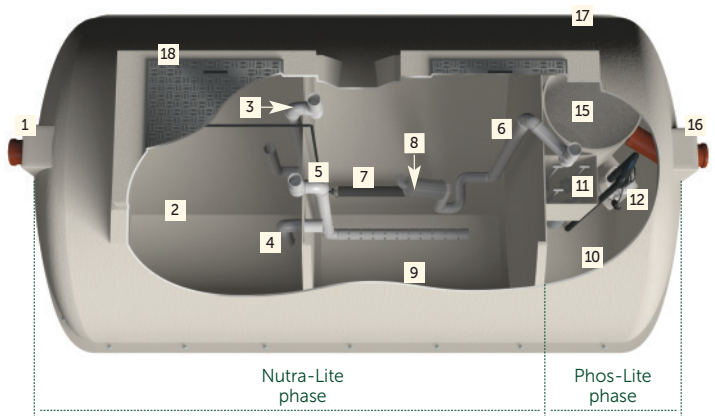
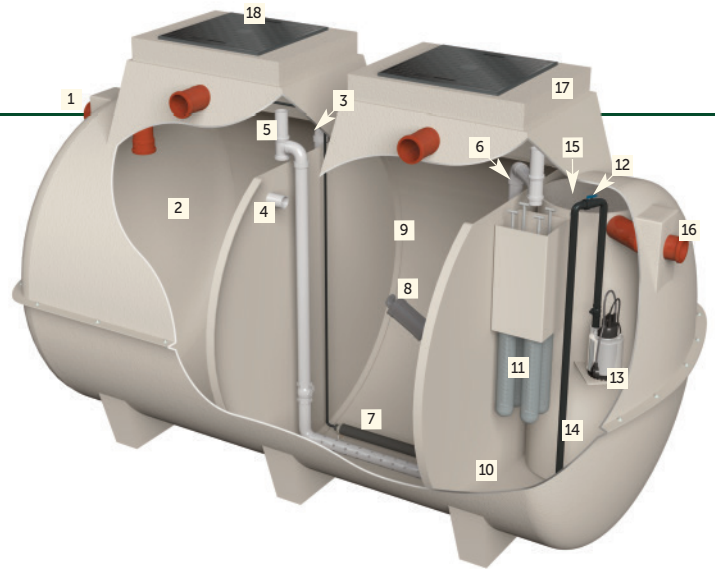
Treated effluent passes from the Nutra-Lite phase to the Phos-Lite phase for the removal of phosphates without the need for chemical dosing. Using a unique adsorption process, the Phos-Lite phase binds phosphorus to the surface of its media, which is composed of naturally occurring elements. This ensures long-term performance across varying flow rates and influent concentrations.

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	1.62mg/ltr
Suspended Solids	4.3mg/ltr
Ammonia	0.38mg/ltr
PTot	0.26mg/ltr
TN _b	10.5mg/ltr

This 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

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

Specifications

Model (Pop)	PE	Length +/-50mm	Width +/-50mm	Height +/-50mm	Inlet		Outlet	
					Invert	Ø	Invert	Ø
Gemini 6	4-6PE	2862	1952	2139	550	110	625	110
Gemini 10	7-10PE	3652	1952	2283	700	110	770	110
Gemini 16	11-16PE	5240	1952	2283	770	110	850	110

Marsh Nutra-Lite

Total process quality



Performance metrics and environmental implications

The Marsh Industries Nutra-Lite SBR delivers exceptional performance, achieving outstanding results in the final discharge as verified by the PIA Test Centre. Against the 20/30/20 targets set by the Environment Agency, the following levels are reached:

Biological Oxygen Demand (BOD): 4 mg/l

- **Significance:** A low BOD indicates the plant effectively removes organic matter, minimising oxygen depletion in receiving waterways
- **Environmental impact:** This protects aquatic ecosystems by ensuring sufficient dissolved oxygen for fish and invertebrates
- **Standard:** Far below UK and EU regulatory limits (<20 mg/l), making it highly compliant

Total Suspended Solids (TSS): 11 mg/l

- **Significance:** A low level of suspended solids ensures high water clarity and reduces sedimentation risks
- **Environmental impact:** Protects aquatic habitats, particularly fish spawning grounds, from having elevated levels of sediment
- **Standard:** Excellent performance compared to general discharge limits (25-30 mg/l)

Ammonia (NH₄-N): 0.5 mg/l

- **Significance:** Exceptionally low ammonia levels highlight efficient nitrification, critical for protecting aquatic organisms, as ammonia is toxic at higher concentrations
- **Environmental impact:** Helps maintain water quality and prevents acute toxicity to fish
- **Standard:** Outstanding compared to most regulations, which often set limits at 5 mg/l or higher

In addition, the unit also delivers impressive nitrate reduction:

Total Nitrate (NO₃-N): 11.1 mg/l

- **Significance:** This controlled nitrate level reflects effective nitrogen management, though nitrate remains present as a byproduct of ammonia removal.
- **Environmental impact:** Helps limit nutrient loading, though further reductions might be desirable in nitrate-sensitive areas
- **Standard:** Meets UK and EU requirements, often set around 10-15 mg/l

Ecosystem protection

- The Nutra-Lite's exceptional results for BOD, ammonia and phosphate make it particularly suited for deployment in environmentally sensitive areas such as rivers and streams

Future proof

- In an ever more environmentally conscious world, the Nutra-Lite SBR offers the client the ability to demonstrate adoption of the most advanced technology that far exceeds existing regulatory targets

Why these results are outstanding

- **Low BOD and Ammonia:** Demonstrate efficient organic matter breakdown and nitrogen conversion
- **Low Suspended Solids:** Protects water clarity and aquatic habitats
- **Verified by PIA:** Testing at the Prüfinstitut für Abwassertechnik (PIA) ensures credible, rigorous and internationally recognised results
- **Compliance:** The results exceed typical UK and EU discharge standards, making the Nutra-Lite plant a robust choice for meeting stringent environmental regulations

Conclusion

The Marsh SBR Nutra-Lite is an innovative sewage treatment plant, providing exceptional discharge quality with industry-leading results. Its performance makes it the most dependable and environmentally friendly solution for protecting waterways and other sensitive sites.

Phosphate targets

The Marsh Nutra-Lite and Phos-Lite combined can achieve ultra-low phosphate levels (0.28 mg/l), far exceeding standards. This prevents nutrient enrichment, combats algal blooms and protects sensitive ecosystems and waterways, making it the ideal solution for sustainable water management in nutrient-sensitive areas.



The Marsh Nutra-Lite boasts the highest overall discharge quality of any sewage treatment plant

Intelligent SBR system management



Marsh Nutra-Lite SBR controller

The Marsh Nutra-Lite SBR controller is an intelligent sewage treatment control system, uniquely designed by Marsh Industries for optimal performance in SBR plants.

Engineered with forward-thinking features and future-proof capabilities, the Marsh controller is unmatched in functionality and innovation, offering a suite of controls unavailable in other systems.

Effortless installation and power-efficient design

Designed with simplicity in mind, the Marsh Nutra-Lite SBR Controller comes pre-configured and ready for seamless integration with the plant. Requiring only a standard electrical socket and a compressor connection, installation is swift and user-friendly.

- o **Minimal air connections:** Just one air connection links the compressor to the controller, and only four additional connections to the plant's aeration and air-lift systems are needed
- o **Motorised valve protection:** These valves require power only during operation changes and will automatically close in case of a power failure, preventing the compressor from flooding
- o **Single compressor operation:** The controller is designed to operate the entire plant with a single compressor, enhancing energy efficiency

Smart connectivity and user-friendly access

As an IoT-enabled controller (Internet of Things), the Marsh Nutra-Lite SBR Controller offers convenience through internet and mobile access, allowing users to configure and monitor the system remotely. The intuitive design includes:

- o **Simple interface:** Essential operations are accessible via three buttons on the controller itself
- o **Mobile browsing:** Installation settings and advanced features are accessible through a mobile phone or tablet, with an easy-to-use interface
- o **Flexible connectivity options:** Connect to the internet using built-in WiFi or an optional GSM module for remote management, monitoring, and upgrades

Comprehensive monitoring and remote operations

Remote management is at the heart of the Marsh Nutra-Lite SBR Controller, providing insights and control. Key monitoring and remote operation capabilities include:

- o **Alerts and notifications:** Customisable email alerts for multiple users keep end-users informed of plant status
- o **Remote operations:** Effortlessly monitor and adjust operations from anywhere, including:
 - Checking water levels and detecting blockages
 - Updating software and setting operational parameters
 - Configuring WiFi and GSM connectivity
 - Viewing operational hours, ECO cycles, internet status, and calibration settings
 - Accessing manual and calibration controls, telemetry, and high-level alarms

Built-in future-proofing and advanced capabilities

The Marsh Nutra-Lite SBR Controller is engineered with long-term adaptability, ensuring it evolves alongside advancements in wastewater technology. Future-proof features include:

- o **Software version control:** Keep your controller up-to-date with the latest performance improvements
- o **Effluent volume calculations:** Track the volume of processed effluent for effective management
- o **Natural coagulant integration:** As natural coagulants become viable, the controller can accommodate these eco-friendly options
- o **Remote upgrades for enhanced performance:** Incorporate the latest SBR research innovations without on-site updates
- o **Seasonal maintenance adjustments:** Adapt the controller's performance to seasonal needs
- o **Multi-user and plant administration:** Perfect for contractors, installers, maintenance teams, as well as end-users, the controller allows for centralised management across multiple sites
- o **Remote assistance:** Installers, maintenance teams and end-users benefit from Marsh's remote support for smooth operations and troubleshooting

Certified excellence and exclusive availability

The Marsh Nutra-Lite SBR Controller is crafted to meet the highest industry standards, boasting the 2024 PIA Certification and exclusively available with the Marsh Nutra-Lite plant, it is the most advanced and feature-rich controller on the market, with advanced technology that is entirely unique to Marsh Industries.

For contractors, installers, and end-users, the Marsh Nutra-Lite SBR Controller offers unrivalled control, automation and efficiency. With this controller, you're investing in a solution that not only meets today's needs but is equipped to grow and evolve with future advancements in SBR technology.

Operating and connectivity options



Operate controller via buttons on unit



Operate controller directly via WiFi access point



Operate controller remotely when controller is connected to household WiFi



Operate controller remotely with optional GSM module and IoT Sim



Status reporting by email at various intervals (ie, 4-hour, 12-hour, daily)



Error report by email, immediate

Testing and certification

Reliable, tested and trusted

The Marsh Nutra-Lite has undergone rigorous testing and earned accreditation in line with EN12566-3 Annex B standards, while Phos-Lite has achieved accreditation in accordance with EN12566-7 test Annex A. These comprehensive assessments were conducted by Prüfinstitut für Abwassertechnik (PIA) GmbH in Aachen, Germany, for wastewater treatment systems accommodating up to 50 PE. This certification confirms the reliability and effectiveness of the products in meeting the demands of wastewater treatment systems for environmentally sensitive sites. All Marsh systems comply with the UK Forward for BSEN12566-3.

The Marsh Nutra-Lite has achieved accreditation in accordance with EN12566-3 Annex B

the Marsh Phos-Lite has achieved accreditation in accordance with EN12566-7 test Annex A.

For combined Nutra-Lite and Phos-Lite performance see table on page 5



Enhanced structural integrity

40% Stronger GRP Material

Marsh Industries places a significant emphasis on the durability and reliability of its products, as evidenced by the meticulous assessment of structural integrity. In line with the testing protocol outlined in ENISO 179-1/1eA: 2010-11, comprehensive evaluations were conducted to gauge the robustness of Marsh Industries' glass reinforced plastic (GRP) materials in comparison to similar materials used by competing manufacturers.

To establish a comprehensive benchmark, three distinct material samples were subjected to rigorous impact testing. These samples included Marsh GRP material in its original form (consisting of virgin unfilled resin), a variant incorporating calcium fillers, and another variant enriched with sand filler. The testing process involved analysing 12 samples of each material, all measuring 80x10x5mm. The pendulum energy utilised for impact assessment was set at 15J, with an accompanying impact velocity of 3.8m/s.

The findings were resoundingly in favour of Marsh Industries' GRP material, showcasing an impressive 40% increase in strength when compared to the other materials under scrutiny. This outcome underscores the superior quality and structural resilience inherent in Marsh's GRP material.

Material fire safety

Marsh Industries upholds the highest standards in product safety and adherence to regulations, as demonstrated by its material fire resistance testing. The focus of this evaluation was to ascertain the ignitability of products when exposed to direct flame impingement. Rigorous testing procedures were carried out to ensure compliance with EN ISO 11925-2:2010 standard.

The testing regimen encompassed practical scenarios designed to gauge the material's response to flame exposure. Marsh Industries' GRP material successfully passed all aspects of the fire resistance tests, achieving EN ISO 11925-2:2010 standard.

Natural England and the Environment Agency's guide to nutrient neutrality

Nutrient neutrality

Nutrient neutrality is a policy aimed at controlling the levels of nutrients, particularly nitrogen and phosphorus, entering water bodies from human activities. Excessive nutrients from agriculture, wastewater, and urban runoff can cause environmental issues such as eutrophication, leading to algal blooms that damage water quality, biodiversity and ecosystems.

In the UK, this issue has become particularly important in areas with protected habitats, like Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), which are governed by the Habitats Regulations. Natural England and the Environment Agency are key regulatory bodies involved in ensuring that new developments do not increase nutrient pollution in sensitive areas.

Natural England's role

Natural England is responsible for advising local planning authorities on protecting natural environments, particularly designated sites. It provides guidance on nutrient neutrality for new housing and other developments near sensitive water bodies.

Key points

- **Guidance to Local Planning Authorities (LPAs):** Natural England advises LPAs to ensure that development projects demonstrate nutrient neutrality, especially near vulnerable habitats.
- **Nutrient budgeting:** Developers must calculate the nutrient load (nitrogen and phosphorus) that their project will contribute to the water system. Natural England provides frameworks and tools to help assess these impacts.
- **Mitigation:** If nutrient neutrality cannot be demonstrated directly, mitigation measures must be proposed. This can include creating wetlands, woodland planting, or upgrading wastewater treatment processes to reduce nutrient runoff.

The Environment Agency's role

The Environment Agency is responsible for monitoring and regulating water quality in rivers, lakes, and coastal waters. It oversees how water companies, agriculture and urban areas contribute to nutrient pollution, and works to limit these impacts.

Key points

- **Water quality regulation:** The Environment Agency sets and enforces limits on nutrient levels entering water bodies through permits for discharges (eg, from sewage treatment plants).
- **Catchment-based approach:** It often takes a catchment-based approach, focusing on the health of entire river systems to manage nutrient levels.
- **Agricultural regulation:** The Agency also regulates nutrient management in farming, providing guidance on land use and fertiliser application, and promoting sustainable practices to limit runoff into water bodies.

Nutrient neutrality in planning

In areas where nutrient pollution is an issue, new developments must not increase the nutrient load on the environment. LPAs, supported by Natural England's guidance, are required to ensure that planning permissions are granted only if projects can prove nutrient neutrality.

Key points

- **Nutrient Neutrality assessments:** Developers must submit assessments to prove their developments won't add to nutrient levels.
- **Mitigation measures:** If developments would add nutrients to the environment, they must propose mitigations such as buffer zones, sustainable drainage systems (SuDS), or contributions to strategic mitigation schemes.

Impacts on development

Nutrient neutrality has had a significant impact on housing developments in certain regions, particularly around the Solent, Somerset Levels and the River Wye. Delays and increased costs can occur due to the need for nutrient assessments and mitigation strategies.

Long-term goals

Both Natural England and the Environment Agency aim to:

- Improve water quality and protect vulnerable habitats.
- Ensure sustainable development without compromising environmental health.
- Support the creation of mitigation solutions that balance development needs with environmental protection.

Overall, nutrient neutrality regulations, enforced by Natural England and the Environment Agency, play a crucial role in safeguarding sensitive ecosystems from the harmful effects of nutrient pollution.

Marsh Natural Solutions

Enabling development in environmentally sensitive areas

Marsh Industries provides innovative, sustainable, wastewater treatment solutions to support nutrient neutrality. Our 'Natural Solutions' range effectively reduces pollutants and nutrients, such as nitrate, phosphate and ammonia, ensuring compliance with strict standards set by environmental regulators.

As industry leaders, we develop cutting-edge products that meet and exceed regulatory requirements, ensuring cleaner and safer water. Our commitment to research and development keeps us at the forefront of wastewater treatment technology.

Choose **Marsh Natural Solutions** for efficient, sustainable, and compliant wastewater management. Together, we can create cleaner, healthier waterways.

Contact our eco-friendly team on

01933 654582

nat-solutions@marshindustries.co.uk

to discuss your project's unique requirements

Other products *from* Marsh Industries

- Sewage treatment plants
- WellWater™ pump stations
- Septic tanks and cesspools
- Uni:Gem★ septic conversion
- Marsh GMS★ grease traps
- Degrilleur™ trash/debris barrier
- Agri-silage tanks
- Water attenuation systems
- Rainwater harvesting systems
- Oil separators and more...

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