

# GEM-APS

## AERATED PRECIPITATION SYSTEM

PHOSPHATE AND AMMONIA REDUCTION



 **MADE IN  
BRITAIN**®



# Eco-friendly, economical phosphate and ammonia reduction

Introducing the latest innovation in our extensive portfolio of domestic wastewater treatment products; the Marsh Gem-APS (Aerated Precipitation System)



**Air blower and control panel housing**

Chemical dosing process is pre-configured based upon the expected flows and loads of the sewage treatment plant

**Chemical dosing components**

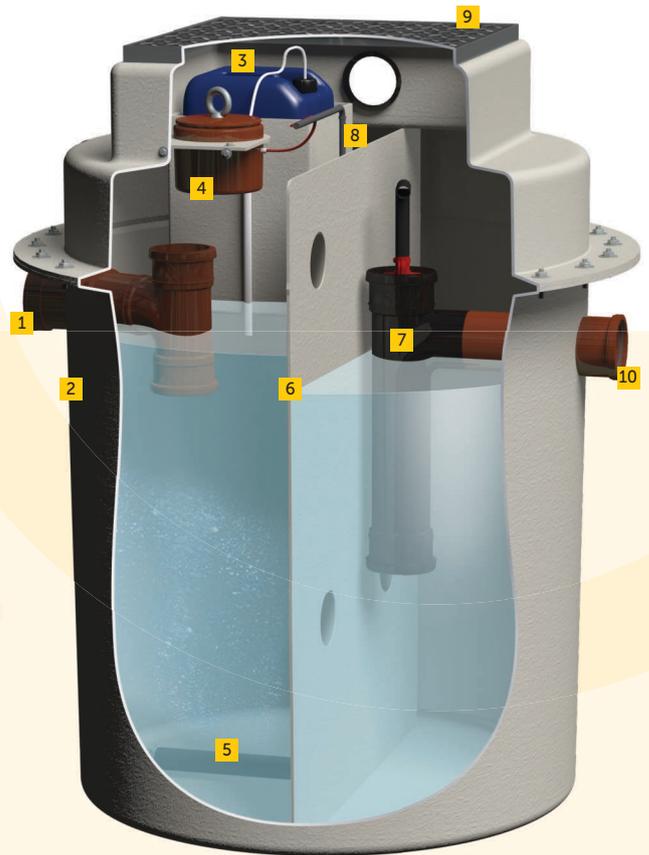
Controlled process involving chemical dosing and aeration

**Gem-APS**

Economical, efficient, and cost-effective phosphate, ammonia and BOD reduction unit

**Marsh Ensign® sewage treatment plant**

The Gem-APS can be positioned at the outlet end of any existing sewage treatment plant (dependent on sizing)



## Overview

The Gem-APS is designed to further reduce phosphates, ammonia and BOD from wastewater that has been previously treated in a domestic sewage treatment plant.

Positioned at the outlet end of any existing sewage treatment plant, the Gem-APS treats the discharged wastewater in a controlled process involving small volumes of chemical dosing and aeration in compliance with British Water and local environmental regulations, allowing the remaining effluent to be safely discharged to a river, ditch or drainage field.

Chemical dosing amounts are pre-configured based upon the expected flows and loads of the sewage treatment plant (Full scaleable detail available). The Gem-APS can also be regulated to reduce phosphate levels further.

Marsh offers commissioning and servicing of the Gem-APS, it is strongly advised to use this service when setting up the unit.

## Benefits

- Tested in accordance with BS EN 12566-7 Annex A at PIA GmbH test facility in Aachen, Germany
- Small footprint and shallow dig for easy installation provides enhanced health and safety benefits
- Heavy duty shell as standard enables installation in all ground conditions. Unique 'keying-in' lip assists anchoring into granular or concrete surrounds
- Near silent, energy efficient compressor (located externally) with integral alarm
- Unique Polylok tertiary filter reduces suspended solids helping to extend drainage field life
- Lockable lid for safety and security
- Low level chemical alarm/indicator

## Features

- 1 Inlet
- 2 GRP tank appropriately sized for the sewage treatment plant
- 3 Dosing chemical container
- 4 Dosing chemical pump in watertight housing
- 5 Aeration diffuser(s)
- 6 Separating baffle with grate to stop media migration
- 7 Polylok filter for solids and flocculent capture
- 8 Pipework and sludge return
- 9 Lockable lid for safety and security
- 10 Outlet

**Phosphate: 0.9mg/L**  
**Ammonia: 0.4mg/L**  
**BOD: 2mg/L**



The Gem APS is a unique innovation for use on sites where phosphate discharge is a problem or where ammonia and BOD requirements are strict for planning consent.

## Tank sizing and specification

For precise sizing and product specification, please contact the Marsh technical team on 01933 654582 or email [sales@marshindustries.co.uk](mailto:sales@marshindustries.co.uk)

**Other eco-friendly products from Marsh Industries**



**Marsh:UV disinfection unit**  
 Ultra violet effluent disinfection for off-mains drainage  
 Removes 99% faecal coliform bacteria levels from sewage treatment plant effluent



**Whispurr®**  
 Acoustic Vibration Reduction (AVR) unit  
 Eliminates noise and vibration from diaphragm compressors used in the water and wastewater treatment sectors

**Product safety**

**Structural integrity testing**

Structural integrity tests, performed in accordance with EN ISO 179-1/1eA: 2010-11, were undertaken to evaluate the strength of Marsh Industries' GRP materials against similar GRP materials used by other manufacturers.

Three separate material samples were submitted for impact testing; Marsh GRP material (virgin unfilled resin), a GRP material containing calcium fillers and a GRP material containing sand filler.

The tests involved 12 samples of each material at a size of 80x10x5mm. The nominal pendulum energy was 15J at an impact velocity of 3.8m/s.

Results proved Marsh GRP material to be 40% stronger than the other materials tested.

**Fire resistance testing**

Fire resistance testing was performed to assess ignitability of products subjected to direct impingement of flame. Marsh Industries' GRP material passed all practical testing to achieve EN ISO 11925-2:2010 standard.

**Design capability**

**GAIA SÉGE® process design software for bespoke systems**

Developed by Marsh Industries, our unique Gaia Sége process design software uses core information to accurately calculate and tailor key variables ensuring total optimisation for sewage treatment plants, pump stations, grease management systems and stormwater attenuation.

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.

**Our technical team can help you with your bespoke off-mains drainage projects today.**

**Commissioning and servicing**

Marsh Industries offers a nationwide service to cover all aspects of commissioning and servicing on the Marsh WellWater pump station range.

Commissioning and servicing packages can be tailored to customer requirements from basic commissioning contracts to commissioning and full service contracts, including on-going support and advice.

**Advice and guidance**

For advice and guidance on choosing the right products for your site please contact Marsh Industries on +44 (0)1933 654582 or email [sales@marshindustries.co.uk](mailto:sales@marshindustries.co.uk)

