



METHANE STRIPPING FROM WASTEWATER

Methane may be soluble in domestic wastewaters and landfill leachate in concentrations of over 25 mg/litre. In practice it is found that methane may be present at levels in the range of 10-15 mg/litre. A dissolved methane concentration of 1.4 mg/litre has been established as being sufficient to produce an explosive methane level in a confined space. A figure of 0.14 mg/litre has been widely adopted as the standard by receiving sewage authorities.

Methane may be removed from wastewater and leachate by a number of methods. Organics offers vertical systems, to minimise footprint requirements, and horizontal multiple-vessel systems where equipment capital cost considerations are senior to landpace costs.



KEY FEATURES

Treat landfill leachate to meet sewage discharge consents.

Minimise the risk of explosion as a result of methane build-up from low level release within confined spaces.

Systems designed to meet site-specific requirements.

Methane stripping may be achieved in either a horizontal, multi-modular arrangement or in a vertical stripping tower.

Methane removal of over 99% achievable with relatively simple-to-operate systems.

Upgrade monitoring and control systems with SCADA and on-line data management.



SPECIFICATION DATA

Flow rates available:

Pre-packaged modular units: 5 - 40 cubic metres per day
 Purpose designed units: up to 2,000 cubic metres per day

Removal efficiency:

Typical >99%, subject to design specification

Design standard:

"Good engineering practice" for low pressure systems
 ASME UL approvals available
 BS5500 approvals available
 Lloyd's certification available

Flow control:

Liquid and air flow rates are controlled by either a manual or a solenoid-actuated chemical duty butterfly valve. All valves are chosen to suit the chemical duty.

Materials:

To suit application. Materials include stainless steels, high quality alloys and plastics.

Control options:

Manual
 Automated
 Gas concentration alarms
 Feed-back loop
 SCADA

Available options:

Dosing systems to prevent foaming
 Waste heat utilisation to reduce minimum viable ambient temperature operation
 Acoustic and thermal insulation for sensitive locations
 Options for the management of calcium carbonate precipitation

For further information please visit our web site or contact our Technical Sales Manager, Mr Terry Scott.

Methane is often found in wastewaters such as the effluent from domestic sewage treatment systems and landfill leachate. The anaerobic phase that results in the production of the liquids for treatment also produces methane in varying quantities. It is not surprising, therefore, that this methane is carried forward, albeit in relatively low concentrations.

Staff with Organics have worked with landfill gas, biogas, landfill leachate and wastewater treatments systems since the late 1980s. This has resulted in a high-level of understanding of all the issues involved. Whilst standardisation is a desirable commercial objective to reduce costs, it remains a fact that each treatment scenario is, to a greater or lesser degree, different. Having an overall understanding of the areas of application ensures that systems can be confidently specified, designed and operated.

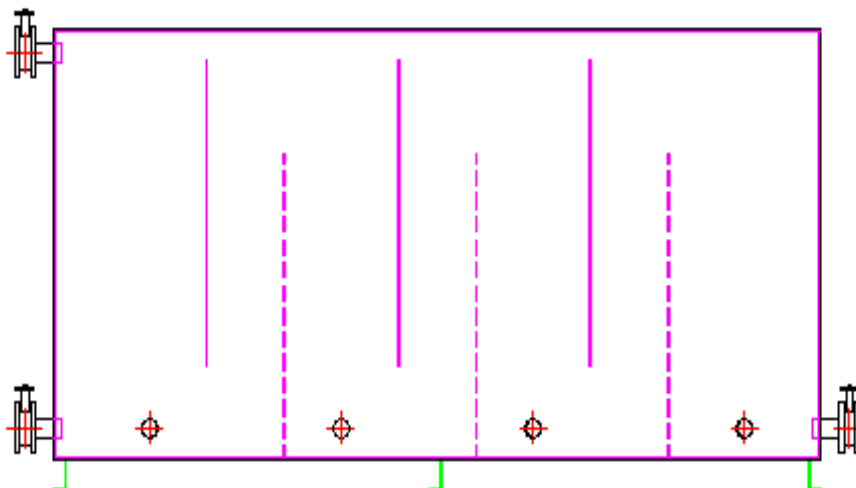
A typical methane stripping facility would involve the following equipment:

- Aeration vessel(s)
- Liquid pumping equipment
- Air movers
- Filtration and separation equipment
- Access facilities for operation and maintenance
- Security facilities
- Datalogging and data management software

All equipment and material are selected to match the requirements of each specific situation. Levels of instrumentation are selected to meet the requirements of the operating environment.



Internal arrangement of modular baffled-methane stripper



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