PREMIER BASE

A Green Solution To Sustainable Sewage Treatment

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Market Overview

The quantity of wastewater sludge generated in Ireland is expected to increase by more than 80% by 2040

The management of this wastewater sludge poses economic, planning and environmental challenges

Over 98% of wastewater sludge is currently reused in agriculture. The agricultural outlet for wastewater sludge is under increasing scrutiny mainly due to perceptions of contamination risk

The total estimated annual cost for sludge treatment and reuse is €28 million per annum based on the 2014 sludge production. This is expected to increase to €35 to €38 million with full compliance with all wastewater discharge licences

Market Overview

In accordance with the waste hierarchy, minimisation is the next most preferred waste solution after prevention

There is the potential to reduce the volume of sludge for transport by 20% to 25% by optimising sludge thickening at smaller wastewater treatment plants

Sludge dewatering has a relatively high operational cost due to the labour, power, chemicals and capital maintenance requirements. The total annual operating cost is estimated at €10 to €15 million

Transportation is a significant part of sludge management in terms of environmental impacts and cost. The annual transport cost is estimated as approximately €8-10 million

The Challenge

A significant problem in the management and treatment of domestic sewage is the dewatering and disposal of sludge

Traditionally the methods of dewatering involve significant operational costs, production of large volumes of carbon and the addition of significant volumes of chemicals

Additionally these methodologies are very difficult to incorporate into smaller existing treatment plants where space is usually restricted

There are a large number of small WWTP's – 937 < 5,000 PE

The Premier Base Solution

Premier Base has developed a green innovative approach to processing and drying Waste Activated Sludge that involves no energy consumption and no added chemicals

The green patented system can be described as a passive multi-stage batch wise process

The product receives Waste Activated Sludge with a concentration in the range of 0.8% to 1% dry solids and dries to in excess of 70% dry solids depending on climatic conditions and client requirements.*

**This range is dependant on the cycle time and local conditions*

The Premier Base Solution Validation

Independent testing analysis have been undertaken by the Water Systems and Services Innovation Centre (Nimbus Centre C.I T.)

Analysis took place at 1 of 3 pilot prototypes located at existing treatment plants in County Tipperary

Results concluded that the units significantly reduced both operational and running costs along with the carbon footprint

The Product

A single unit consists of:

A concrete tank*: unit dimensions 1.2m in depth, 3m in width and 8m in length.

A membrane or GRP roof

Scrapers and Conveyor depending on dry solid target

An outlet in one short wall, which is closed by 2 baffle plates, manually operated

An open sump outside the outlet, to receive decanted water

A decant water return pump in a dedicated closed manhole/sump

Sludge inlet pipework mounted on the wall opposite the outlet

**Concrete precast by reputable blue chip supplier*

The Product

The floor of each unit or bed is constructed in a shallow V-shape to the center and is sloped towards the outlet at one side of the tank

This design results in the dry solids rising to the top of the unit which is invers to other technologies and is key to the process.

The units can be installed singly or in multiple units, in parallel configuration.

In larger plants units can be installed to reduce volume and take pressure and therefore reduce cost of existing process

Units can be installed without any interference to daily workings of a plant. This is done by gravity feeding to units from holding tanks

Product Benefits Summary

Exhibits significant environmental impact benefits in the reduction of carbon outputs

Significantly reduces the operational costs of a treatment plant

Reduces sludge volume by up to 90%

Reduces chemical costs

Uses no energy and therefore doesn’t create noise

Is non mechanical and made of concrete therefore durable with minimal maintenance

Eliminates Odour

Can be installed without interfering with daily running of plant

Training provided to optimise utilisation and plant impact