

SEWAGE TREATMENT PLANTS

Written by Admin

Tuesday, 02 August 2011 13:10 - Last Updated Sunday, 19 January 2014 09:54

SEWAGE TREATMENT PLANTS Can be prepared as containerized unit for 200 m³/day , Capacity : up to 1000 m³/day installation & commissioning of sewage treatment plant, which depends on the principle of extended aeration. We will provide the specifications needed for specifying the system on all your future sewage treatment plant inquiries along with the conventional type of extended aeration system.



1. Extended Aeration Plant

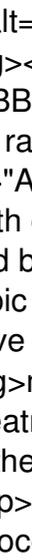
The pumped flow of raw sewage from the lift station arrives at the Extended Aeration Plant. The sewage discharges into the aeration chamber where it is mixed with recycled activated sludge (a mixture of natural aerobic micro-organisms). For purification to precede the mixture must be agitated to prevent settlement and aerated to supply oxygen for the respiration of the micro-organisms. Both agitation and oxygen are provided by the aeration system comprising air blowers. The micro organisms remove the organic material from the sewage and multiply to greater numbers. This increase in number of micro-organisms results in excess activated sludge, which requires occasional disposal off-site. The frequency and volume of sludge wastage is best determined from individual plant operation. When the biological reaction is complete the mixed liquor flows to the settlement chamber where the velocity is reduced and the activated sludge separated from the secondary effluent during a period of quiescent settlement. The secondary effluent discharges from settlement tank via the settled sludge is pumped back to the aeration chamber to treat more sewage where the balance will be wasted. Excess sludge is transferred by means of sludge submersible recycling pump to sludge holding tank, where it is disposed periodically by client.

Disinfection System

The overflow of secondary effluent from the extended aeration plant discharges into a Chlorine Contact Tank where it meets a controlled dose of sodium hypochlorite solution. The sodium hypochlorite solution is drawn from the hypochlorite storage tank by a hypochlorite-dosing pump of adjustable delivery rate.

Tertiary Filtration Plant

Level switches in the Chlorine Contact Tank actuate Filter Feed Pumps which deliver the disinfected secondary effluent to the Tertiary Filter through graded sand media. The tertiary effluent from the filters passes on to the Irrigation Tank where clean water is used for irrigation by means of irrigation pumps to be installed inside the irrigation tank.



2. Moving Bed Bio Reactor (MBBR)

Plants

The pumped flow of raw sewage from the lift station arrives at the Aeration MBBR section.

"Aquatech-USA" The basic principal of the **moving bed** process is the growth of the biomass on plastic supports that move in the biological reactor via agitation generated by aeration systems (aerobic reactors) or by mechanical systems (in anoxic or anaerobic reactors). The supports are made from plastic with a density close to 1 g/cm³ letting them move easily in the reactor even when the capacity reaches 70%.

The **moving bed** processes come from the current trend in wastewater treatment, from the use of systems that offer an increased specific surface in the reactor for the growth of the biomass, achieving significant reductions in the biological reactor volume. Initially fixed bed systems were used, however it was discovered that this type of process show a series of

SEWAGE TREATMENT PLANTS

Written by Admin

Tuesday, 02 August 2011 13:10 - Last Updated Sunday, 19 January 2014 09:54

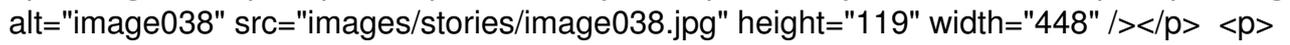
operational inconveniences such as the blocking of the bed because of the excessive growth of the biomass, this makes periodical cleaning obligatory. These drawbacks have caused the need for the creation of simple biofilm processes that eliminate them and that ease their operation; these are the moving bed processes. This type of process can be applied both to treatment plants for the biodegradation of organic material as well as for installations with nutrient elimination, in urban and industrial wastewaters

Biological processing

The treatment plant will take suction from the pump well by its own feed pump. The pump is level controlled and has a capacity which is 2-3 times the average daily flow. The plant has therefore an intermittent working mode in terms of hydraulic flow, while the air blower supplying air to the bioreactors is continuously running. The biodegradation reactor comes in one or two stages depending on required cleaning efficiency. Plants with higher cleaning efficiency than 80-85 % need a two-stage system. The bioreactors are degrading the dissolved organic matter by oxidation into carbon dioxide, which escapes to the air, and to biomass that acts as activated sludge. A suspended, free floating biofilm carrier medium is providing a large, protected biofilm surface for the bacteria and is simultaneously accumulating the active bio sludge inside the reactors.

Main features

- * compact & occupy very less space
- * easy transportation.
- * no chemical addition
- * easy start up, semi automatic.
- * central control
- * less maintenance, low capital & operating cost.
- * simple assembly and operated by on site labour.

 Packaged plant 500 m3/day