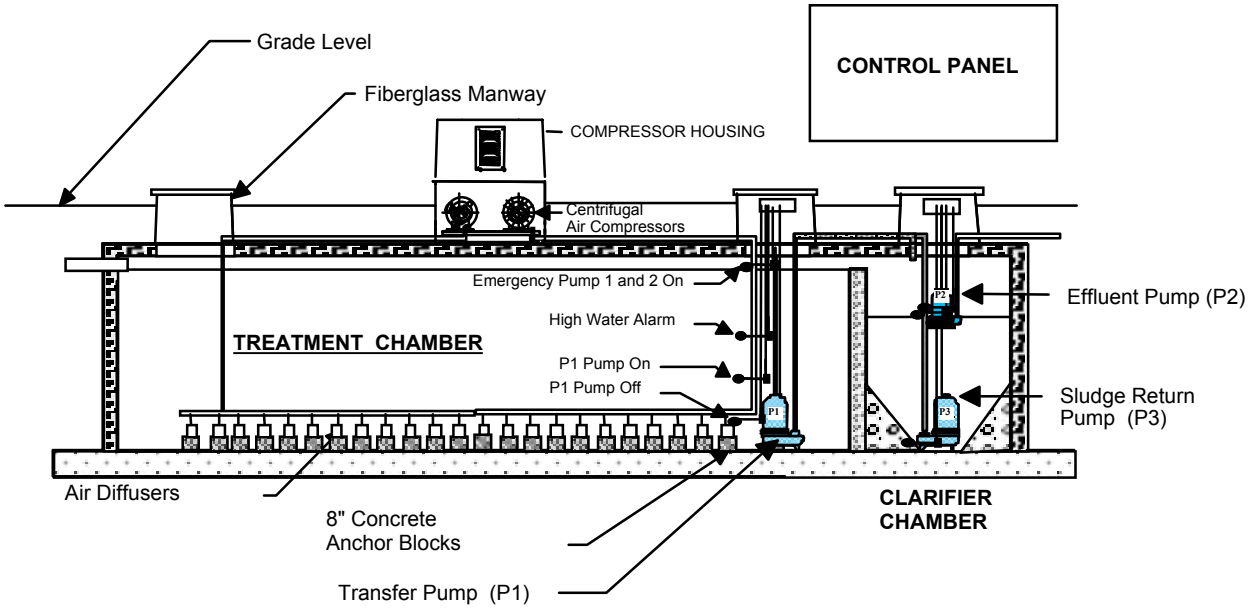
The *Clean* Machine
WASTEWATER TREATMENT SYSTEMS

Aquarobic
CANADA

THE AQUAROBIC MAXI-PLANT



Process Description:

The Maxi-Plant™ is a Sequential Batch Reactor (SBR) system that works on a periodic fill and draw principle. The treatment chamber is sized to hold a minimum of 1 1/2 times the daily wastewater flow, providing the system with the ability to balance occasional shock loads of up to 50% over the designed flow without any detrimental effect on the effluent quality.
The system is factory programmed to processes one batch every 4 hours (1/6 of the daily wastewater flow) for 6 batches per day.

- Raw sewage enters the treatment chamber and is continuously exposed to aeration treatment
- Every 4 hours the transfer pump (P-1) pumps mixed liquor for 30 minutes from the treatment chamber filling the clarifier chamber until it reaches the weir and overflows back to the aeration treatment chamber, thus skimming off floatables for further treatment.
- Then a 3 hour perfectly quiescent period follows in the clarifier.
- After the 3 hour settling period, the effluent pump (P-2) transfers the clear supernatant to the discharge area, leaving 1/2 of the volume in the bottom for the sludge return pump (P-3).

  When the liquid reaches a predetermined level, a float switch stops the effluent pump (P-2) and starts the sludge return pump (P-3) transferring the remaining settled sludge to the front end of the aeration chamber for additional biological digestion.
- Immediately, another cycle is initiated for a total of 6 batches per day.

It is important to point out, that the sequencing batch process of this system is not affected by flow variations. The sewage is retained in the large aeration surge chamber and only a predetermined volume is transferred to the clarifier chamber. <u>There is no need to worry about peak flows or design peak flow with this process.</u>

During periods of low flow, a low level float switch prevents transfer pump (P-1) from starting, allowing the system to skip one or several cycles. Also the air compressors can be programmed to operate at intermittent time cycles, saving energy during low flow periods.