EXPERIMENT-12

AIM:- To develop automation Project for industrial problem using Wonderware InTouch

PROJECT STATEMENT:- Sewage Water Treatment Plant

ABSTRACT:-

Waste water and Sewage produced by Manufacturing and Process plants as well as by households is fed to this Sewage Water Treatment Plant (STP) where Physical, Biological and Chemical Treatment is applied to it and water is made fit to be used again.

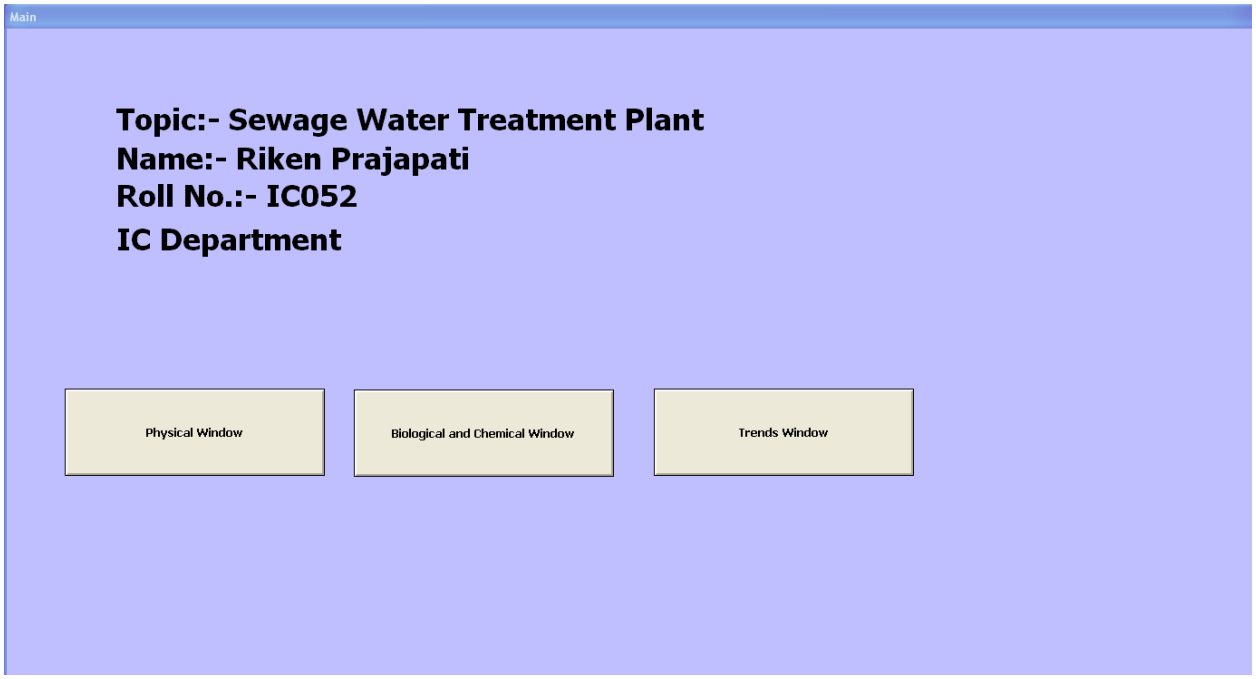

Fig-1 Main Window

WINDOWS & EXPLANATION:-

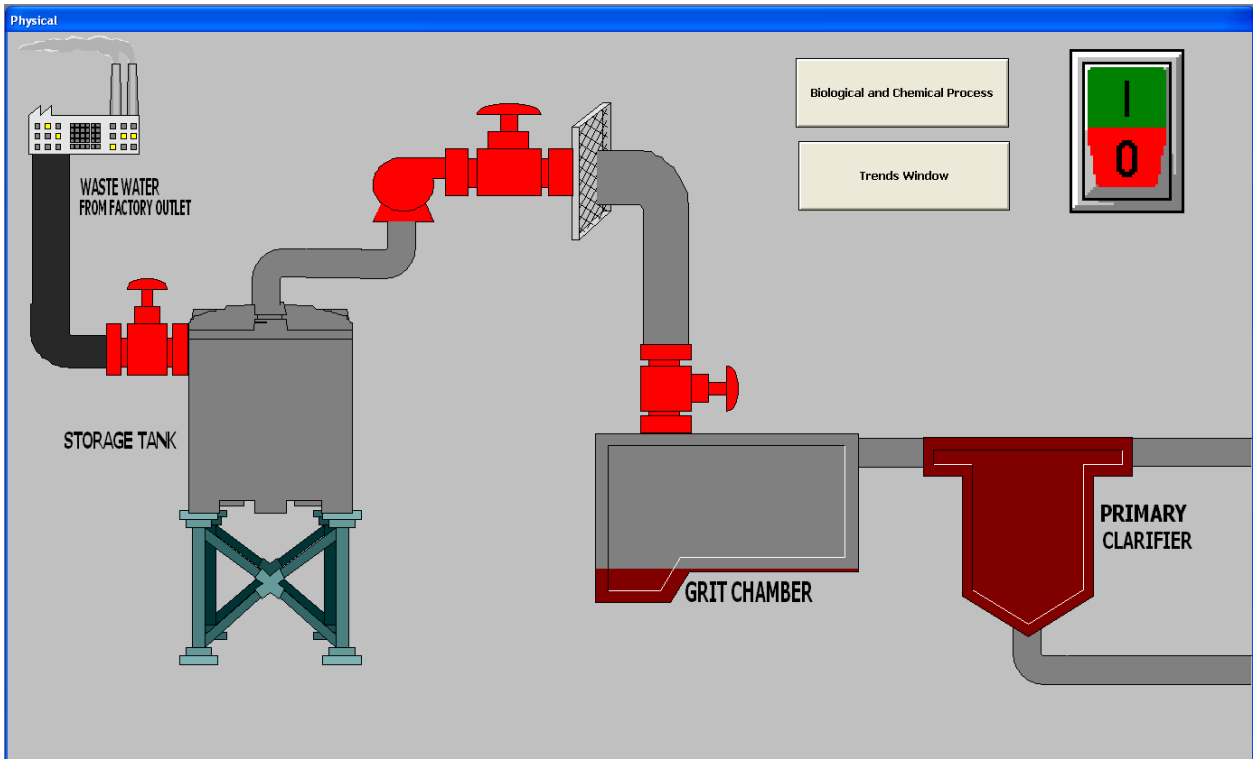

Fig-2 Primary Treatment Window

Sewage coming from Factory Outlet is stored into the storage tank. When the tank gets filled, the pump starts sucking the sewage which is initially passed through primary screening where large non-biodegradable waste is removed and then passed to the Grit Chamber. In grit chamber sewage remains for sometimes so that solid waste i.e., pebbles and stones gets settled down and remaining is passed to Primary Clarifier where it remains for 2-3 days and sludge is settled down, that sludge is passed to Aerobic Digester.

The among mentioned processes comes under Primary Treatment. Next step is Biological Treatment.

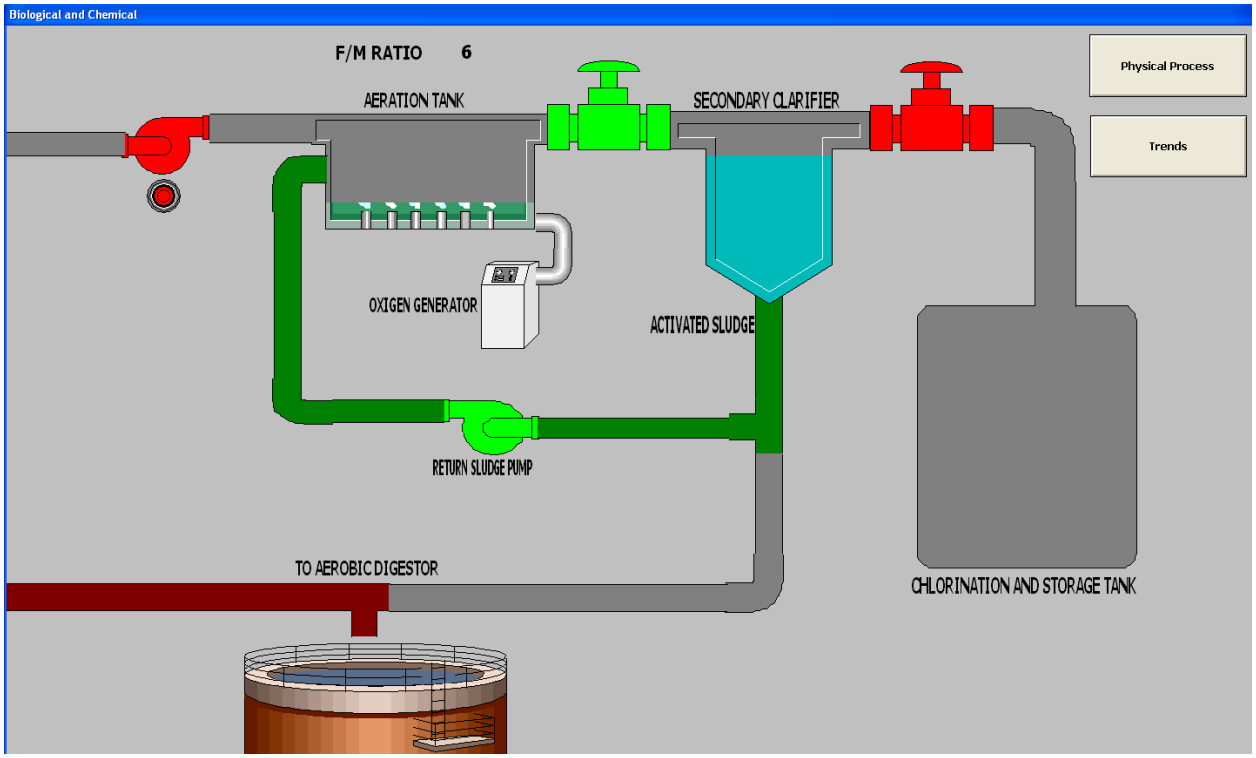

Fig-3 Biological and Chemical Treatment Window

After passing sludge to the Aerobic Digester, remaining water is transferred to the Aeration Tank. In an aeration tank organic waste is removed from the waste water. This work is done by microorganisms(bacterias) which are already present inside the water. Amount of bacteria in water is increased by passing oxygen to it using the Oxygen Generator. This organic waste free water is then passed to Secondary Clarifier. The remaining bacterias gets settled down here which is called activated sludge. This activated sludge is passed back to the aeration tank in the next cycle through Return Sludge Pump to generate more bacterias in aeration. Opening of this return sludge pump depends on the Food/Microorganism(F/M) ratio.

The among mentioned processes comes under Biological Treatment.

Water without any sludge is then passed for Chlorination which comes under Chemical Treatment.

After all these 3 Treatments sewage water is made again fit to use.

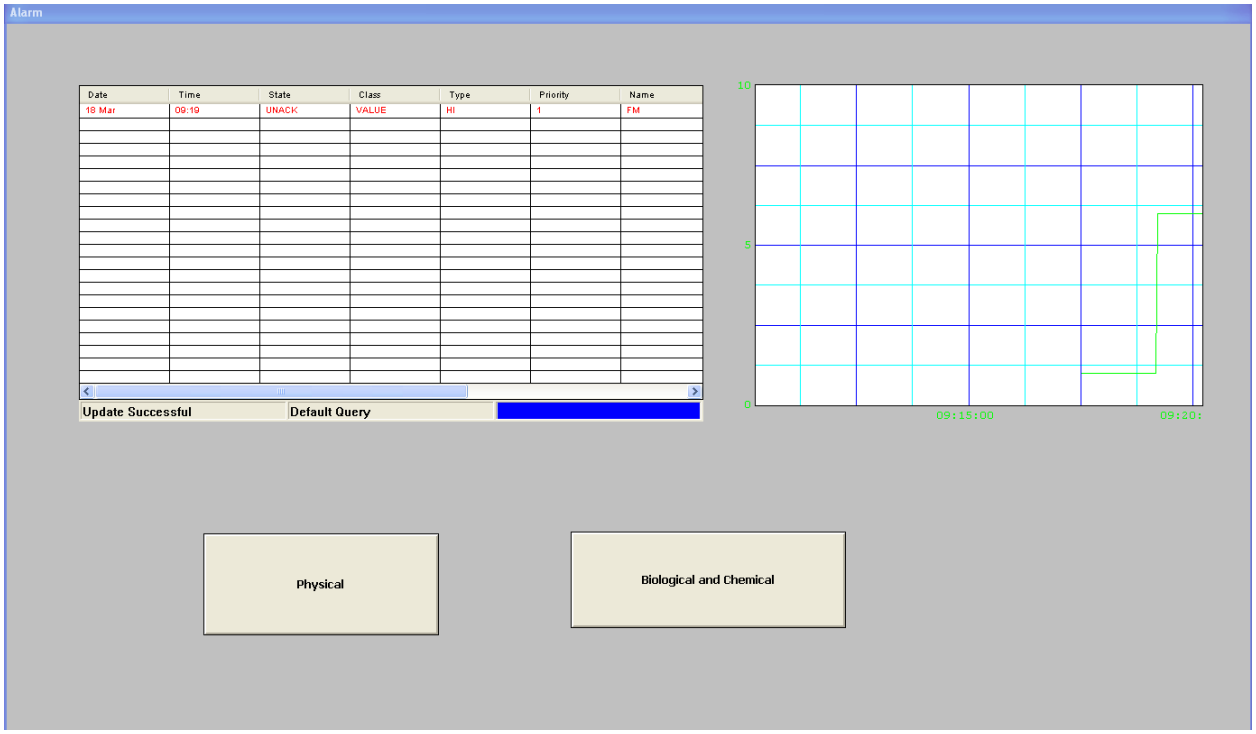

Fig-4 Alarms and Trends Window

This is the Alarms and Trends Window. Alarm is set for F/M ratio as well as Real-Time trend is maintained for the same.

CONCLUSION:-

Sewage Water Treatment plant is designed including different processes that are used to clean the water.