Technical Specifications

The raw wastewater is entered to manual coarse screen with bar space 40 mm and Mechanical fine screen with bar space 10 mm. one Manual screen with bar space 20 mm is considered as mechanical fine screen stand by. Coarse screens are used to protect mechanical fine screens. The mechanical fine Screens are used in place of or following coarse screen where greater removal of solids are required to protect process equipment. Collected screening is transferred to rubbish mobile container through belt conveyor.

The screened wastewater is entered to grit chamber. In aerated grit chamber air is introduced along one side of a rectangular tank. The separation of grit from wastewater is usually accomplished in separate grit chamber designed to physically separate heavy grit particles from lighter organic solids. The grit accumulated on tank bottom is pumped to grit collecting tank through air lift pumps.

By forces aeration, the grease and scum is floated to liquid surface of grease removal part then skimmed to metal oil storage tank removal grit by sludge scraper. The required air for aeration and air lift pump is supplied by grit removal blowers.

Grit removal effluent is entered to pump station. In this pump station, there are three submersible pumps (2 active and 1 standby) for transferring wastewater to the next unit (biological treatment).

The selected biological process is an extended aeration method including anoxic, aeration and sedimentation that allows continuous inflow of wastewater into the treatment tanks in order to remove BOD, and nitrogen during denitrification, nitrification, and aeration.

Pretreated wastewater is carried to a division box that distribute it into 2 anoxic tanks.

Each anoxic tank is equipped with one submersible mixer. The adopted aeration system is diffused aeration with fine disc diffusers and blowers. Biological treatment unit effluent is pumped to sedimentation unit through submersible pumps in pump station. Produced sludge is collected by peripheral scraper into the hopper and then it is entered to sludge pump station by gravity. Some part of sludge is pumped to biological treatment unit by returned activated sludge pumps and wasted activated sludge is transferred by WAS pumps to combined Belt filter press. Clarified effluent is sent to chlorination contact tank and hypochlorite dosing system is considered as disinfectant agent.

The sludge is fed to combined belt press by WAS pumps installed in sludge pump station. A belt filter press system consists of polymer feed equipment, combined belt filter press, sludge cake conveyor and support systems (wash water pumps and air compressors). In order to meet the requirement for producing class B sludge, sludge cake is entered to sludge lime mixer from sludge conveyor and lime solution is transferred to sludge lime mixer through screw conveyor. Dewatering unit supernatant is transferred to biological treatment unit through supernatant transfer pumps.