

has reached high water line, or shortly before, it will begin to enter and fill the 6" timing pipe through the 1" inflow pipe, and timing valve. As the liquid rises in the timing pipe it will compress the air in the starting bell, the air pressure in the timing bell and 3/4" pipe to auxiliary syphon becomes greater than the air pressure (from 33" head) in the main trap and therefore the two air columns will unite and as soon as this air pressure reaches slightly greater than the equivalent pressure due to 34 inches of water, all water will be blown from the outside leg of the auxiliary syphon, the air in the main trap will be released and the main syphon will go into operation.

Drainage of the timing pipe will commence as soon as the main syphon goes into operation and should be completed shortly after the contact beds have been emptied. The rate of emptying this pipe is to be controlled by the 1" valve.

The rate of emptying the contact beds through syphon "C" after it is set in operation is controlled by means of a four inch adjustable check valve between the short leg of the syphon and the chlorine mixture inflow pipe. The proper time required to empty the beds has been estimated at 1 1/2 hours. The maximum rate would be approximately 105 gallons per minute.

An automatic control chlorinator installed on the floor above the chlorine mixing chamber will adjust the amount of chlorine solution injected into the mixing pipe to the amount of effluent flowing through the pipe in gallons per minute. This automatic control is very necessary as the quantity flowing into the mixing chamber will vary not only with the discharge from the different contact beds but also with the decrease in head as the water depth decreases in the syphon chamber.

The chlorine mixing chamber has a water content of 1400 gallons.

The estimated maximum inflow to contact beds is 4725 gallons every six hours. As the time of emptying has been assumed at 3/4 (three-quarters) to 1 1/2 (one and a half) hours this would give a maximum flow through the mixing chamber of 4725 = approximately 105 to 53 45 to 90 gallons per minute. The contact period of the chlorine solution with the effluent in the mixing chamber will be from 13 to 26 minutes, under heavy flow conditions.

As the disposal plant is situated in a narrow rocky canyon, where all effluent would eventually reach the stream through the gravel overlying bed rock, it was deemed necessary to so design the plant that all effluent could be collected and effectively chlorinated before it was discharged into the stream.

The cost of the plant was to be under \$7,000.00. The plant should be so designed as to require the minimum amount of labour for attention and regulation, and contain no operating machinery other than the chlorinator and gate valves.

Septic tanks were selected as being the most suitable and economical under the above conditions.

Contact beds were selected as being the most efficient filter that could be built for the money available, and as capable

of producing .....

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