DESIGN OF SEWAGE TREATMENT PLANT FOR JAIHIND CAMPUS

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ABSTRACT

A STP (sewage treatment plant) is necessary to receive industrial, commercial, & domestic waste & removes materials which are harm for general public. It is generally useful for produce an environment-safe fluid and solid waste, its suitable for disposal of growing environmentally pollution especially domestic sewage. The study was aimed at designing a treatment plant for the Jaihind campus, Kuran, Located in Maharashtra state of India.It is important to have a well-designed of Sewage Treatment Plant with a deep level to properly classify the sewage. It is indeed crucial to investigate the waste portrayal of water systems at the Jaihind College of Engineering, which houses a large number of a people on its campus. The presence of various departments, laboratories, residential units, academic blocks, and hostels makes it all the more important to conduct this investigation.

I. INTRODUCTION

To remove contaminants from wastewater treatment is a vital process it includes household sewage, runoff (effluents) and domestic sewage. This process involves the use of chemical physical & biological process to eliminate physical, chemical, and biological contaminants. The objective of a treatment is to produce a treated effluent and a solid waste or sludge that is suitable for discharge or reuse back into the environment. However, this material is often inadvertently contaminated with many toxic organic and inorganic compounds. Sewage diagnosis,

on the other hand, is the method of a remove harmful by from sanitary sewage, including both stream flow (pollutants) and home sewage. It involves the use of pesticides, mechanisms to eliminate physiology, contaminants, and toxins based on biology.

II. OBJECTIVES & AIM OF PROJECT

A. Objectives: Treatment has three primary objectives, which are crucial for public health and environmental safety. Removal of floatable and postponed particles from the sewage. The second objective is the removal of Biochemical Oxygen Demand (BOD), which refers to the amount of dissolved oxygen required by bacteria to decompose organic matter in sewage. The third objective is the removal of micro-organisms that may cause dangerous diseases.

B. AIM OF PROJECT: The basic aim of design sewage impurities from the sewage and to make the liquid component. To protect the environment from water pollution by removing contaminants such as bacteria, nutrient, chemical and particulates. Whether it is from a commercial purpose, wastewater needs to be cleaned before it is discharged.

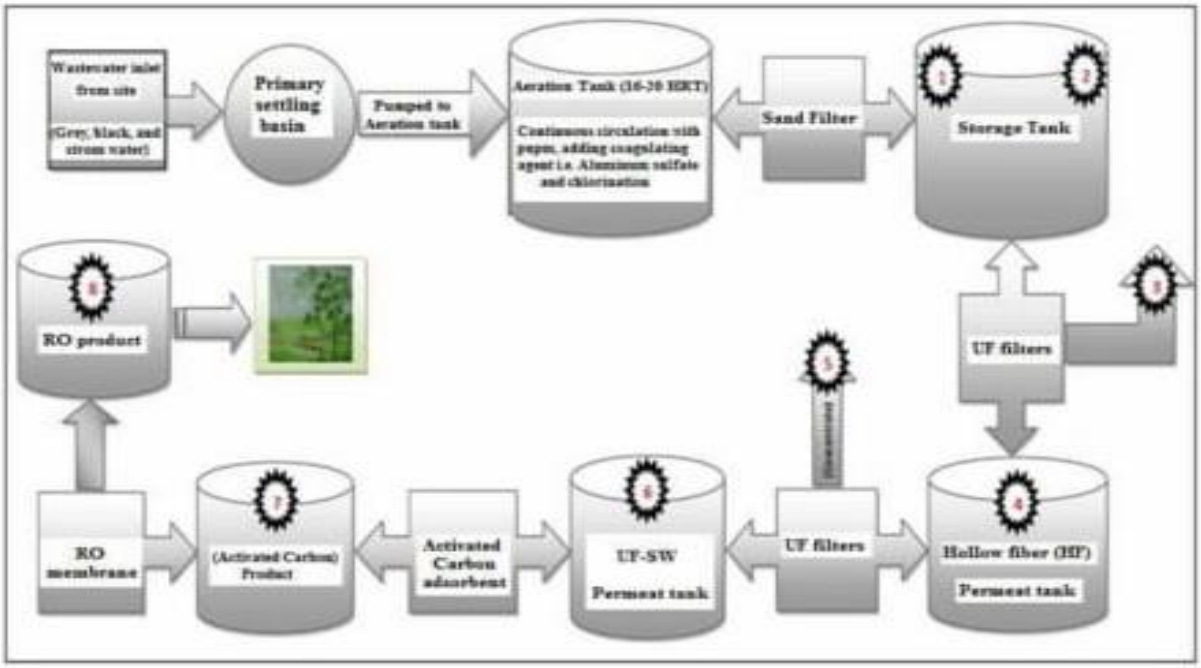
III. STUDY AREA

The study area of Jaihind campus-

IV. LITERATURE REVIEW

In 2014, Murthy Place Donc Abou assessed the construction of wastewater treatment facilities for residential Community. As part of this initiative, three different types of healing processes were initiated, including physiological and biochemical practices. To increase the reliability of discharging unwanted harmful byproducts, the detention moments of wastewater were expanded at every becoming well again . This step is an important that ensures treated solid waste and effluent or sludge are safe for discharge or reuse back into the environment, without posing any harm to public health or the environment. In 2004, drainage treatment of wastewater by flocculation & coagulation examined by Lin and Ahmad and SBR techniques, and aim is to intensify groundwater

resources to meet requirements of extensive irrigation. In this study SBR & Conventional methods are used. The repeated tasks SBR innovation is a method rooted in a lonely sludge treatment nuclear plant. Compound flocculation alone was able to decrease the sanitary sewers COD and hair color by up to 75 and 80% (COD and NTU to just below 20 and 2mg l). The groundwater resources were consistently strong and were deemed fit for irrigating pu



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environment & public health.Environmental factors.

A. Consideration of process

a) Required Degree Treatment

b) Characteristics & performance of treatment plant.

c) Fluid velocity of wastewater & various attributes.

B.Consideration of cost

a) Convinces for territory building projects.

b) Charges of operating include power generation, chemical industries, & bolsters.

VII. METHODOLOGY

Flow chart for STP-

VIII. RESULTS AND DISCUSSION

Population = 800 persons

Per capita demand = 135 per head

Water demand = 800 x 135 = 108000 L/day (0.00125 m3 /sec)

FOR COLLEGE: Population = 1747 persons

Per capita demand = 45 per head Water demand (1747x 45) = 76615 L/day Sewage demand, QS2 = 0.00088674 m3 /sec

Total Sewage Demand, QS=0.00125+0.00088674 = 0.0021356 m3 /sec.

Peak factor = 3.5 (..Ref RAO & DUTTA)

Therefore, Q = 3.5 x 0.0021356 = 0.007474 m3/sec.

Design of Coarse Screen:If 20 no of bars is provided.

No. of openings = 21

IX. CONCLUSION

The preservation of a environmentally while balancing socio-economic & health concerns in crucial for waste-water treatmenting. To achieve, it is recommended to undergo primary, secondary, tertiary treatment before final disposals, depending on a type of wastewater. The study's findings indicate that traditional activated sludge is not very flexible or efficient at treating wastewater from homes, but the growth technologies that are attached to it are remarkably better at removing pollutants, even at low HRT.

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