CRITICAL STUDY OF SEWAGE TREATMENT PLANT, BHANDEWADI, NAGPUR

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Abstract - Bhandewadi STP is the one of the biggest collaboration project of Nagpur NMC and MAHAGENCO. The capacity of the plant is 200ML D. The wastewater is collected through the sewers and collected at the Plant site. The awareness about the contributions from the treatment of best water has widened the scope for water treatment plants. As the part of Environment Protection, see which treatment is inseparable from our daily life. due to water scarcity problems, treatment technology needs to be constantly optimized to meet the public demand. this research will focus on the working and efficiency after sewage treatment plant which includes tests on PH, temperature, BOD, Cod, nutrients and quality of sludge. this research work also includes the overall efficiency of sewage treatment plant.

1. INTRODUCTION

with the rapid urbanization and development of industries, the composition of sewage has become more and more complex. Present serious treatment plants are unable to eradicate them., in this paper, factors affecting the treatment process will be studied and the advantages and disadvantages both current treatment technology will be discussed. the degree of treatment can be determined by influent Water characteristics to the influence characteristics. The number of treatment alternative angle developed your children treated restaurant realities. A treatment method includes physical, chemical and biological operations. This paper aims for the treatment of Savage and using the regulated series for various secondary purposes, just moving a step towards water conservation.

2. PROCESS

1) Preliminary treatment
2) Primary Treatment
3) Secondary Treatment

a) Preliminary treatment: preliminary treatment is the removal of coarse solids and other large material frequently found in raw water. Removal of this material is necessary to increase the operation and maintenance of following treatment units.

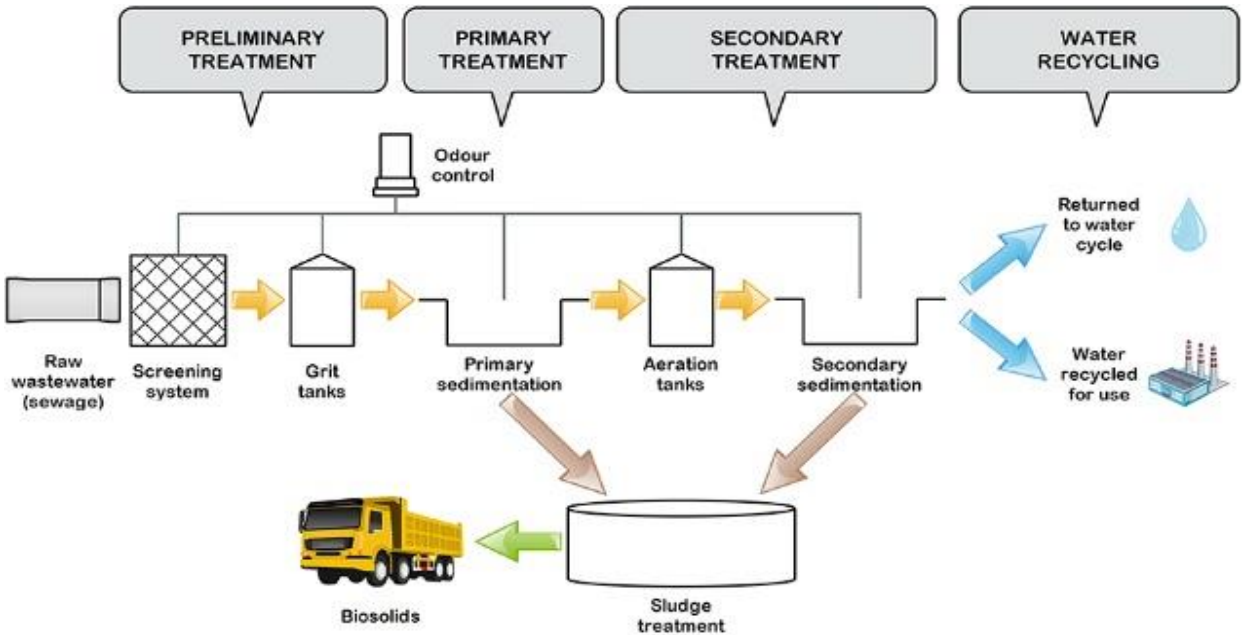
i) Screen: Screen is used to remove larger size floating particles present in raw sewage

ii) Grit Chamber: It is used to remove inorganic particles having size greater than 0.2 mm.

b) Primary treatment: primary treatment consists of just separating the suspended materials and also the heavy settable organic and inorganic solids. It also helps in removing the oils and grease from the sewage. Primary treatment can reduce the BOD of the revenue wastewater by 20-30% and the total suspended solids by some 50-60 %. Primary treatment is usually the first stage of wastewater treatment. Many advanced wastewater treatment plants in industrialized countries have started with primary treatment.

c) Secondary (biological) treatment: Secondary (biological) treatment removes the dissolved organic matter that get away during primary treatment. This is attained by microbes consuming the organic matter as food. And changing it to carbon dioxide, water and energy for their own growth and reproduction. The biological process is then followed by additional settling tanks to remove more of the suspended solids. About 80% of the suspended solids and BOD can be removed by a well running plant with secondary treatment. Hence Activated sludge process consists of aeration and SST unit. Excess sludge goes to sludge digester. It is used to remove organic matter present in sewage. Trickling filter: it also removes BOD. It can be used instead of ASP. Sludge digester: It digests the sludge by anaerobic decomposition. Sludge drying beds: To dry the sludge in presence of sunlight.

3. FLOWCHART OF SEWAGE TREATMENT PLANT



Flowchart of Conventional sewage treatment plant

4. RESULT

The treated wastewater has key parameter &such as BOD, COD, TDS, TSS, pH etc. Which are analysed periodically. The working condition and comparison of standard unit are tabulated in table 1 and table 2 gives permissible limits.

NOTE :- All values are in mg/lit. Except PH

Table 1. Sample Analysis at STP

PARAMETER	pH	SS	TDS	BOD	COD
INLET	6.37	135	950	119	391
OUTLET	4.46	28	342	17	85

Table 2. Permissible Limits of Sewage Treatment Plant

PARAMETER	pH	SS	TDS	BOD	COD
MPCB norms	5.5-9	30 max	2100 max	20 max	100 max

5. CONCLUSION

The present scenario of India is it is not using the full potential of treated waste water. Treated wastewater is discharged directly into nearby water sources. The effluent can be used for sewage farming, gardening, cooling waters in industries.

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