



e-ISSN: 2319-8753 | p-ISSN: 2320-6710

IJIRSET

International Journal of Innovative Research in
SCIENCE | ENGINEERING | TECHNOLOGY

INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN SCIENCE | ENGINEERING | TECHNOLOGY

Volume 10, Issue 3, March 2021

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 7.512

9940 572 462

6381 907 438

ijirset@gmail.com

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Purpose of Planning For Sewage Line System for Mahurzari Village

Prof Natish Sayyed ⁽¹⁾, Prof. Anantkumar Giradkar ⁽²⁾, Chetana D. Dhore ⁽³⁾, Madhulika D. Dhore ⁽⁴⁾,

Harsh S. Patle ⁽⁵⁾, Asit S. Sondawale ⁽⁶⁾, Raksha D. Rapanji ⁽⁷⁾, Ajay S. Ram ⁽⁸⁾

Head of Department, Department of Civil Engineering, NIT Polytechnic College, Nagpur, India⁽¹⁾

Assistant Professor, Department of Civil Engineering, NIT Polytechnic College, Nagpur, India⁽²⁾

Diploma Students, Department of Civil Engineering, NIT Polytechnic College, Nagpur, India^{(3),(4),(5),(6),(7),(8)}

ABSTRACT: Wastewater is liquid waste discharged from residential buildings, commercial facilities, industry and agriculture. It usually contains some pollutants, which are produced by mixing waste water from different sources. According to its source, wastewater can be classified as sanitary, commercial, industrial or agricultural wastewater. The term "sewage" should be separated from the term "sewage". Waste water is contaminated with feces or urine. Households, hospitals, offices, factories, etc. produce wastewater. Liquid household, municipal or industrial waste that is usually processed through pipelines or sewers (household or joint treatment). Domestic wastewater contains a large amount of dissolved and suspended pollutants, is the main source of pathogens (microbes that cause diseases), and is degradable. Because pathogens are excreted from the body through feces, all urban sewage may contain certain types of pathogens, and these potential pathogens directly endanger public health. The main purpose of this research is to design a sewage treatment system for the village of Makhurzari, which is becoming a development site due to the steady growth of the population, resulting in excessive sewage. Sewage accounts for most of the cost of sewage and domestic sewage. When planning the sewer system, the sewer pipe is the basic unit that recurs in the design process. The project involves the design parameters of the sewage treatment plant.

The project is designed for an estimated population (2021-2061) between 30 and 40 years old. Although the design and data will help the design of wastewater treatment plants in the future. It is very suitable to meet the needs of 3 million related people in a long period of time. The case study analyzed the planning goals of the sewage treatment system in Mahurzari Village, Nagpur, Maharashtra.

KEYWORDS : Sewage treatment Plant , Designing, Dual Media Filtration, Reuse, Sewage, TSS.

I. INTRODUCTION

In many countries, it is common for untreated wastewater to be discharged into water bodies. This is a common cause of surface and groundwater pollution, because there is a big gap between the production and treatment of domestic wastewater in India. A part of daily necessities such as homes, offices, and commercial facilities is called wastewater or sewage. Generally, the water in household and municipal wastewater is 99.9%, and the remaining 0.1% of suspended, colloidal and dissolved solids are mostly organic because they are composed of water. The maximum content of carbon compounds (for example, human waste, paper, plants, etc.) also contributes to the development of pathogens that consume available oxygen in water bodies. In addition, industrial wastewater is mixed with domestic garbage, polluted water bodies and irrigated land. Wastewater cannot be used directly for drinking, because the concentration or content of ions, metals and microorganisms in the wastewater exceeds the allowable limit, which may cause harm to the human body. As a result, the groundwater continuously drawn from the land meets the increasing demand for drinking water and other uses (such as gardening, washing, etc.), and many ecological and social problems have emerged in the area. It serves as a substitute for groundwater for certain purposes.

We usually think that the sewer is the foundation of the toilet, but no, the sewer is not only the foundation of the toilet, it is the sewage of washing machines, bathrooms, showers, dishwashers, etc. Four people produce 400 500 liters of sewage every day. On the other hand, the sewer is a piping system, a pumping station that collects and treats sewage. Black water can be used for watering and rinsing.

Sewage or domestic/municipal sewage is a type of sewage produced by the human community, which is characterized by volume or flow, physical state, chemical and toxic components and its bacterial state (the amount of organic matter present).) Most of them contain grey water (from sinks, bathtubs, showers, dishwashers and washing machines). Black water (water used for toilet flushing and human waste removed); soap and detergent; toilet paper (rarely seen in areas where a bidet is used instead of paper). Sewage usually enters the sewer system through building pipes and leads to another location or sewer system in the area (many types). The surface runoff discharged into the sewer system depends on the structure of the sewer system (sewer system or combined sewer system).

Domestic Sewage :-

This means that waste and sewage from people or households are dumped or used for treatment. Untreated household waste flows through the sewer system.

Sanitary Sewage :-

The sewer is an underground pipe system used to divert sewage from bathrooms, sinks, kitchens and other pipes. The part of a wastewater treatment system in which filtration, treatment and disposal are performed.

Industrial sewage :-

Industrial waste is the waste produced by industrial activity which includes any material that is rendered useless during a manufacturing process such as that of factories, mills, and mining operations. Types of industrial waste include dirt and gravel, masonry and concrete, scrap metal, oil, solvents, chemicals, scrap lumber, even vegetable matter from restaurants. Industrial waste may be solid, semi-solid or liquid in form. It may be hazardous waste (some types of which are toxic) or non-hazardous waste. Industrial waste may pollute the nearby soil or adjacent water bodies, and can contaminate groundwater, lakes, streams, rivers or coastal waters.

Strom Sewage :-

Rainwater or rainwater is pressurized wastewater collected in an open canal or pipeline system. The reality is that most of the wastewater produced around the world is untreated, causing widespread water pollution, especially in low-income countries. According to global estimates by the United Nations Development Programme and UN-Habitat, 90% of all wastewater is discharged into the environment without treatment. In many developing countries, most household and industrial wastewater is discharged untreated or only after initial treatment.

The term sewage in nowadays regarded as an older term and is being more and more replaced by “waste water “. In general American English usage , the terms “sewage” and “sewerage” mean the same thing

II. LITREATURE SURVEY

Rajat Palya and Dr.V.K. Sethi (2018) Studied on Design Of a Sewage Treatment Plant for a locality in bhopal to recycle the liquid waste . Sewage implies the collecting of waste water from occupied Areas and conveying them to some point of disposal .the lipid waste will required treatment before they are discharged into the water body or otherwise disposed of without endangering the public health or causing offensive conditions .

As the cities have grown , the more primitive method of excreta disposal have gain place sewerage system . even in the small villages the greater safety of sewerage , its convince and freedom from nuisance have caused it to be adopted wherever finances permit .

Pramod sambhaji patil et. al. (2016) Studied on design of sewage treatment plant for dhule city . some treatment units are designed like screens , greet chamber, storage tank, settling tank , aeration tank, and skimming tank . the effluent can also be used for artificial recharge of grout water , flushing , Foam Control , Fire protection , Law sprinkling

Swati Shree Samal (2016) Studied on Design of Sewage Treatment Plant .With this steady increase of population, there will be more generation of household and domestic sewage . so there is a basic need of construction off sewage treatment plant with a view of sufficient capacity to treat the sewage . a sewage treatment plant is quite necessary to receive the domestic and household waste and thugs removing the materials which crests harms for general public .

Hagenimana Christian and Nahayo Deogratias (Msc) (2018) Studied on Design Of waste Water Treatment Plant, Case study : “IPRC WEST” Household waste: waste , other than human and animal wastes , discharge from the home. House hold waste usually contain paper , household cleans , detergents , trash , garbage and other substances homeowners discharge on to sewer system. in this institution many detergents and other cleaning substances are used .(



Spellman, 2014).Waste water treatment is the process of removing contaminations from wastewater and household sewage , both runoff and domestic .(Ali.2011).

M . Bhargavi , E. Ananta Rao , T . Pravallika and Y. Sri Teja (2018)Studied on Analysis And Design of sewage treatment plant : A Case study on viziangram Municipality . The main objective of this study is carried out to design of sewage treatment plant for a vizianagaram municipality. Sewagwe treatment is the process of removing contaminations from waste water , primarily from household sewage .physical , chemical and biological process are used to remove contaminants and procedure treated wastewater that safer for the environment .

Shobhan Majumder , Poornesh , Reethupoorna , Razi Musthafa (2019)Studied On Design of sewage treatment pant at Bearys Institute of technology , Mangalore Shivarajani and Thomas (2017) have presented performance study for treatment of institutional wastewater by activated sludge process . The maximum BOD removal efficiency obtained was 93.7% and turbidity removal efficiency was 87% in the 8 hrs HRT .

III. METHODOLOGY

The main objective of sewage treatment unit is to reduced the sewage content (solid) for the sewage mahurzari village has been a developing place due to steady increasing in population. There will be more generation on domestic household and municipal sewage .

A sewage treatment plant is quite necessary to receive the domestic and household waste and thus remaining the materials while harm for public heath , it’s objective is to produced and environmental safe fluid . waste and solid waste suitable for disposal or reuse. The sewerage system will be designed for village depending upon the data collected using questionnaires survey & grampanchayat records .This system will be designed for next 30to40 years .Future growth of the village.

- Data collection of villages – outlets , exiting system if any , disposal point
- Design of sewage system manually and compare it with software
- Estimation of the system.

IV. RESULT AND DISCUSSION

City and Towns have sewage system in place carry the waste water from our homes . hotels , factory to a sewerage system treatment plant and waste awter is treated . the treatment of waste water goes through different stages .waste water is treated to remove the physical , chemical , and biological contaminates present in it through various process .

Flow Diagram OF Sewage Treatment Plant :-

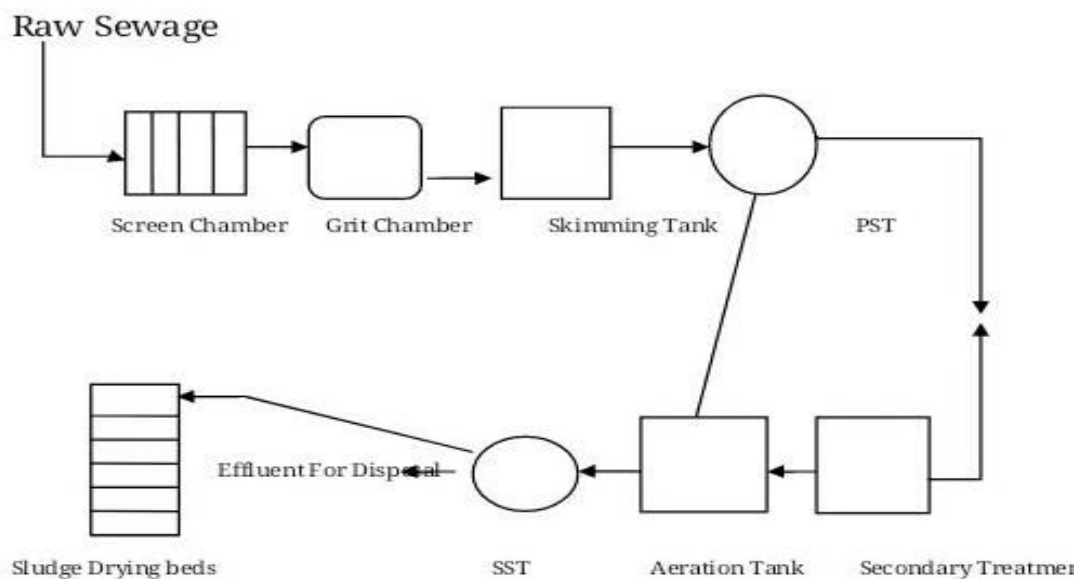


Diagram 1: Flow Diagram Of Sewage Treatment Plant

V. CONCLUSION

A Successful technical project involves the integration of various forms different filed . Due to increase in population in recent days and looking on the future aspect , it was quite necessary to construct a sewage treatment plant in village . the plant is designed to meet needs and demand of approximate 300000 population with a very long period of time . the project deals with the design parameters of sewage treatment plant the design has been done for predicated population of 30 to 40 yr (2021 -2061)

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ISSN INTERNATIONAL
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