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Study of Biological Oxygen Demand and Chemical Oxygen Demand of Waste Water of Gajraula, District Amroha, UP

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ABSTRACT

The study thought deals with the contamination by biological oxygen demand and chemical oxygen demand from sewage waste of Gajraula. In this study area has no waste treatment system in Gajraula. This is condition among of cities in Uttar Pradesh. The untreated municipal waste water from this city is openly exhausted. There are no authorities for checking on polluting the ground water of this region. In nearly ninety percentages waste water formed worldwide remainder unprocessed creating extensive increased water contamination, particularly in rising countries. The current situation shows that the dealing of untreated waste water is essential if not the access of this waste water in underground water shall be extremely dangerous to flora and fauna of this region.

Keywords: Sewage waste water, treatment system, pollutants.

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1. INTRODUCTION

Comparatively over seventy percentages of global areas, water is certainly mainly valuable ordinary source with the purpose of exists on our globe. Exclusive of the apparently priceless compound mixed of H_2 and O_2. This is important on enlargement, progress, riches of existing compound on our earth. While such as person know the reality, there ignore via contaminating these water bodies. Consequently, this have been gradually other than definitely poisoning earth to spot when organisms are dealing otherwise face uncontrollable cost (Kumar N 2009).

Underground water is very much precious suitable to capability to utilize for objectives. The drinking water contamination, we know difficulty and turn into component of resolution. The poisonous matters inside natural sources of water bodies, it gets mixed in water and fixed on the surfaces. It outcome in contamination and quality of water degraded and also affect the underground drinking water (Kumar N 2010). Several types of contamination may take place by usual process; this is regularly such as outcome of human being behavior. The utilize of water in every day routine, nearly one hundred twenty eight liters individual per day.

Types of pollutants

We have several categories of pollutants. One type likes disease-creating like many germs, many virus, many protozoa, many parasitic organisms it come into sewerage unprocessed waste. In the occurrence of above organism's water performs like main medium of conduction for waterborne disease such as dysentery, cholera, typhoid and many others. The second type is O_2-demanding. Which include biodegradable substance like animal manure with the plant residue. The third type of pollutants is inorganic substances soluble in water including acids, bases, salts and toxic metals. More quantities of the above materials make water unfit for drinking purposes and health (Merch 1974). Other type of pollutant includes plant micronutrients. Which are nitrogenous compounds, phosphorous compounds and ammonical compounds soluble in water. A harmful class is suspended residue including soil, silt. The very harmful class includes radioactive and thermal pollution for amount of disease like cancer, origin and genetic defects (Kumar, N.2021).

Sources of water pollution

Drinking water contamination is generally due to human being actions. The mainly sources are point with non point, first source release pollutants at definite location throughout pipe-lines and sewers points inside underground water. The second source for point like as factory, waste water treatment system, coal mines, oil refineries with agricultural runoffs. The sources for non point incorporate acid deposition by air, traffic. Other point sources classified as municipal waste, industrial effluents and agricultural runoffs (Kumar N 2018).

Study Area

Gajraula is a municipal board (nagar palika) city in district Amroha, Uttar Pradesh. It is situated at 28.85°N 78.23°E. Gajraula is situated on NH 9. Gajraula is 105 km away from New Delhi. The holy River Ganga is presently 7 km away from the Gajraula city. It is also the head office of Gajraula block. It is an important industrial city of district Amroha with some multinationals industries such as Jubliant Life Sciences, RACL Geartech, Pharma Teva API etc.

2. MATERIALS AND METHODS

The use of water like as drinking purposes, bathing purposes with the irrigation for agriculture. In the reference rapid population, fast industrialization and unsystematically quick urbanization, ejection of the sewage is estimated to take concerning the modify in excellence of water. The current estimation for the biological oxygen demand and chemical oxygen demand of water samples selected from municipal sewerage of Gajraula. The used for these purpose waste samples from three location of Gajraula municipal sewerage waste water have been collected. The locations are Railway station road (Site-1), Chandpur road (Site-2) and Hasanpur road (Site-3). In Gajraula huge quantity of effluents from industries is exhausted into the municipal sewerage. The samples of the waste water from the different locations were collected for laboratory examination. The methods mentioned in APHA, 1998 used for the determination of values in waste water (AWWA 1992 and WHO1984).

3. RESULTS AND DISCUSSION

The characterization of waste water, which is determined via many numbers of examines. The outcome of the values gives a thought regarding the deterioration of excellence of the waste water. The studied values were compared with their standards. The calculated amount of biological oxygen demand varies in 81 ppm to 96 ppm which are advanced than the biological oxygen demand amount of treated waste water (below 20) and a large amount of regular river water (2 to 8). The amount of chemical oxygen demand increases with the level of contamination and varies in between 89 ppm to 98 ppm, where the dissolved organic substances become more important. The calculated values of COD are in compliance to the BOD values.

Sewage water treatment system are proposed to construct the community sewage well-matched for dumping into the surroundings (outside, ground water, soil), to reduce the ecological with physical condition impact of municipal sewage, and also construct municipal sewage perfect for recycling with reprocess (Sawyer 1978). The majority of the our cities and towns presently have no sewage treatment system working for treatment of

waste water removal and house hold water. The unprocessed water is openly entered to the water resources. This pollutes the clean water of the area and makes it unhealthy for practice (Kumar N 2021). The present studies expose the quantity of deterioration in clean water. The evaluated amounts of the majority are a large amount advanced than normal amount. So, treatment of sewage water is essential via using any water treatment or purification system.

Table 1: Calculated values of parameters

S. No.	Parameters	Site no.1	Site no.2	Site no.3	Standards-WHO	Min	Max	Mean	Standard deviation
1	BOD in ppm	96	88	81	6	81	96	88	7.5
2	COD in ppm	98	96	89	10	89	98	94	4.7

4. CONCLUSION

This is evaluated that due to fast with wildly urbanization of the cities and load on municipal sewage water plants has improved to a large extent. The nonstop accumulation of untreated sewage water in the cities to fresh water resources is creating an disturbing condition to excellence of outside with ground water. As a result whole population of a city the surroundings up more treatment system is needed.

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