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Intensity of Colour Present in Industrial Water Sample (Treated) of Nipani Town

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Abstract: ***The Industrial water samples (Treated) were taken from the vicinity of Halsiddhnath sugar factory from Nipani town and analysed every month throughout the year. We have studied the intensity of colour in industrial water sample (Treated). Intensity of colour content was analysed as per Indian Standard Institution and Indian Council of Medical Research have suggested 5 units as desirable units of colour and 25 units as an excessive limit. higher than the desirable limit of 5 Units up to 25 Unit. The seasonal analysis indicated that the Intensity of colour were generally higher in summer it shows maximum average intensity of colour in industrial treated effluent 0.09 units, in winter 0.07 unit than their levels in rainy season 0.02 unit.***

Keywords: Industrial (Treated) water sample, pollutant, Intensity of colour

1. Introduction

Due to rapidly increased in population the demand for water resources also increased & water pollution problem arises. In the present study, the physical parameters such as colour of water is changed due to industrial effluent, domestic wastes and human's interference which affected on pure quality of water as well as human beings are suffering by water borne diseases, its affected on human health. So the analysis of intensity of water colour is very important.

In the present study, the intensity of water colour were studied in the industrial (Treated) water samples at Nipani. The industrial water samples (Treated) were taken from the vicinity of Halsiddhanath Sugar Factory in the glass bottles by following standard procedure.. The samples were collected every month throughout the year and analyzed in laboratory to determine the intensity of colour in industrial effluent..

2. Materials and Methods

The colour of water is found to be yellow or brown which occurs usually due to the presence of organic matter derived from soil, vegetation, and its decay. It could also be due to metallurgical effluents the colouring organic matter should, therefore, be removed from water and this can usually be achieved by the use of Coagulants (flocculent) in settlement tanks and passage through rapid sand filters.

Absence of in water sample is a prerequisite in the determination of colour, as it interferes in the measurements colour changes is also caused by change in $P^{H.}$ so the results should be accompanied with the P^{H} of the sample at which the colour has been determined.

Procedure –

The colour of water samples were quantified as absorbance at 367.5 mm using UV- Visible Spectrophotometer.

3. Results and Discussion

Colour of water may be due to industrial wastes, humus, peat materials, plankton, natural metallic ions (e.g. iron, and manganese) etc. Indian Standard Institution and Indian Council of Medical Research have suggested 5 units as desirable units of colour and 25 units as an excessive limit. Intensity of colour recorded a minimum of 0.005 unit in Industrial treated effluent in June and maximum of 0.197 unit in industrial treated effluent in December (Table.No - 13)

The Intensity of colour varied with seasons in summer it shows maximum average intensity of colour in industrial treated effluent 0.09 unit, followed in winter 0.07 unit and in rainy season 0.02 unit (Table No – 14). The maximum intensity of colour observed at water sampling site No.4.(Fig No -1) is attributed to continuous discharge of organic matter from domestic waste, industrial effluents, provision of soil, washing, bleaching and leaching of agricultural waste. Sampling site No – 7 showing an excess of algae growth indicated increasing nutrients level in water.

Table 1: Intensity of colour in Industrial (Treated) Water Sample

Stations	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0.420	0.078	0.040	0.125	0.278	0.005	0.000	0.042	0.046	0.042	0.020	0.207
2	0.028	0.217	0.080	0.087	0.083	0.00	0.000	0.005	0.028	0.072	0.068	0.078
3	0.135	0.153	0.084	0.084	0.142	0.00	0.000	0.010	0.053	0.072	0.080	0.096
4	0.220	0.150	0.240	0.164	0.340	0.210	0.000	0.004	0.112	0.113	0.114	0.187
5	0.276	0.156	0.245	0.162	0.321	0.121	0.000	0.008	0.118	0.118	0.127	0.197
6	0.154	0.057	0.155	0.163	0.158	0.675	0.000	0.002	0.008	0.010	0.014	0.037
7	0.064	0.037	0.078	0.134	0.096	0.000	0.000	0.005	0.009	0.012	0.013	0.045
8	0.062	0.046	0.050	0.092	0.112	0.000	0.000	0.003	0.010	0.030	0.027	0.034
9	0.086	0.00	0.037	0.098	0.073	0.040	0.000	0.108	0.009	0.008	0.012	0.047
10	0.057	0.012	0.033	0.094	0.083	0.000	0.000	0.025	0.017	0.010	0.024	0.042
11	0.045	0.016	0.057	0.121	0.066	0.000	0.000	0.034	0.011	0.007	0.008	0.025
12	0.123	0.040	0.104	0.090	0.072	0.000	0.000	0.018	0.007	0.008	0.034	0.070

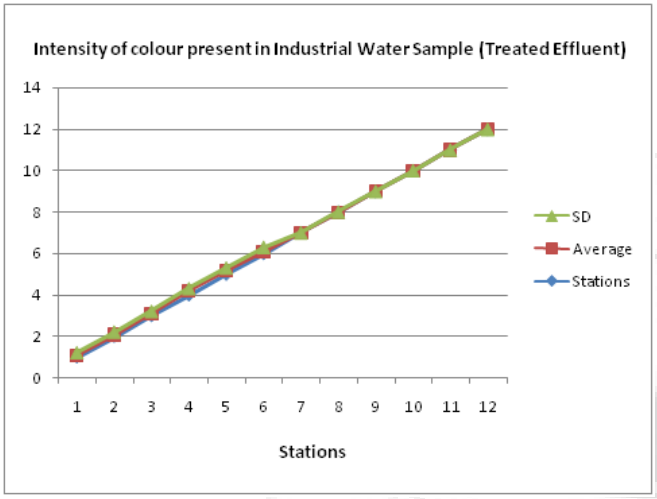

Figure 1: Intensity of colour in Industrial Water Sample (Treated Effluent)

Stations	Average	SD
1	0.1	0.1
2	0.1	0.1
3	0.1	0.1
4	0.2	0.1
5	0.2	0.1
6	0.1	0.2
7	0.0	0.0
8	0.0	0.0
9	0.0	0.0
10	0.0	0.0
11	0.0	0.0
12	0.0	0.0

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