Performance Evaluation of Water Treatment Plant at MIDC Hingna, Nagpur- A Review

Ajay S. Mahinge
M. Tech Student
Department of Civil Engineering (Environment)
GHRCE Nagpur

Isha. P. Khedikar
Assistant Professor
Department of Civil Engineering
GHRCE Nagpur

Abstract

The water treatment plant is important role for purifying and supplying water sustained supply of safe and potable water is of paramount significance in promotion of health and wellbeing of the people. It is commonly observed is most of conventional water treatment plant there is many people work on it, to performance evaluation of water treatment plant at various country The effluent water qualities of both the purification plants were found to be within the limits of WHO guideline, water treatment plant to check the performance and physical, chemical and biological characteristics may be doing occurs.

Keywords: Water Treatment Plant, Operation Performance and Maintaince

I. INTRODUCTION

The water may be prechlorinated to kill microorganisms, control odors and taste, and aid in coagulation and settlingS. The water may also be aerated, which removes carbon dioxide (CO₂) and raises pH, oxidizes iron (Fe) and manganese (Mn), removes hydrogen sulfide (H₂S), and removes organic contaminants. Potassium permanganate (KmnO₄) may be added to the water in the collection tray of the aerator in order to remove iron and manganese from the water. Ozone may be added to the water to treat iron and manganese, remove algae, neutralize hydrogen sulfide (H₂S), and aid in flocculation. The main objective of water treatment is to purify the polluted water and make it fit for the human consumption, through the removal and killing of organism’s sickness (pathogenic organisms) and remove the taste, smell, unpalatable brownish discharge, some of the excess of dissolved metals and a range The validity of the water for human consumption is a measure of the purity of water as well as compared with the water consumption for industrial and agricultural sectors.

Study of water treatment plant is carried out with all aspects and considerations including physical, chemical and bacteriological, to determine its efficiency and to produce water quality, the physic-chemical parameters are turbidity, total solids, suspended solids, total dissolved solid, Temperature, hardness, chloride, pH, alkalinity, D.O, residual chlorine etc.

II. LITERATURE SURVEY

Hussein Janna, Adnan A. Al-Samawi “Performance Evaluation of Al- Karkh Water Treatment Plant in the City of Baghdad” presented that physical characteristics supplied water to turbidity present I water, the laboratory data may be collected In the year of 2000 to 2002 December, used to study of performance evaluation to finding the turbidity present in water to adopted 2 days and average of 30 days, raw water quality may fluctuated to many seasons.

The performance of 98% well water treatment plant is compared to Iqaqi drinking water quality standard for the average of 1 month of 68% violated to united state environmental protection agency (USEPA) std according to scientific conventional method is used to different stages of water treatment plant is highly recommended. To finding the such parameters color, turbidity, temperature, taste and odor.to the better result for performance of plant Relationship between the raw and supplied (potable) water using turbidity data.

Baroniya Mamta, Baroniya Sanjay Singh and Jain Monica “Operation and Maintenance of Water Treatment Plant at BNP Campus Dewas, India: A Case Study” presented that now a day increasing the populations of developing country to distributing the water before through analysis through every treatment units, the place at Bank note Press Dewas MP India conventional treatment addition of alum, coagulation, flocculation, sedimentation and filtration and disinfection by the chlorination updated operation and maintainace for requirement of people compare to other plant level, water treatment plant is playing an important role in purifying and supply to pure water to the public areas

Sarker Rahman and Tarek Zayed “Performance of Water Treatment Plant Elements” presented that parameters are selected including technical, physical, environmental and operational aspect of water treatment plant.

The has been adopted value of additives Multi-attribute theory (MAUT) design and construction are important parameter to the water treatment plant conditions with its operations and maintainace, It Eigen Vector Method is used to weight of parameter to preference to the scale 0-10.
Ali Ahmed Mohammed, Shayma A. Shaker and Alaa A. Shaki “Sustainability and Performance Evaluation of Drinking water Treatment plants: A case Study in Iraq of Al-Krama Project” presented that the water treatment plant capacity to 22500 M³/day in 1980 Baghdad city, water supply to residential area. The removal of filtration, sedimentation average value of removals sedimentation basin was about 24% reduces and also the removal efficiency of filtration is high at 85% compared with other in rainy season the turbidity may 20 NTU and the free chloride (Cl₂) was high but it may fall within the parameters September and December month high turbidity is discharge. The deficiency of the crew of the power plant have dramatically cause a shortage in the efficiency of the plant, the removal efficient of the filtration, sedimentation will be addressed as well as the turbidity during the three years.

Hussein Janna, Adnan A. Al-Samawi “Performance Evaluation of Al- Karkh Water Treatment Plant in the City of Baghdad” presented that physical characteristics supplied to turbidity laboratory data may collected to 2000 to 2002 December used to study of performance evaluation to finding the turbidity with 2 day and average of 30 days the raw water quality may fluctuated to many seasons. The performance of 98% well water treatment plant is compared to Iraqi drinking water standard for the average of 1 month 68% violated to United States Environmentally protection Agency (USEPA) std according to scientific conventional method is used to different stages of water treatment plant is highly recommended

M. A. ElDib and Mahmoud A. Azeem Elbayoumy “Evaluation of A Water Treatment Plant Performance” presented that with increasing and care of the government of Egypt to the importance of field of production and supply may new water treatment plant either by constructed or earlier during past few year performance of the water treatment may better evaluation and treatment to the monitoring and understanding specific of each and every units to evaluations the conclusions of the requirement to necessary to modifications for continuous design and operating schemes.

The research outlines to finding of investigations of the treatment plant in Dakalia (meet fares), Evaluations may researches the parameters reading to check the efficiency result may tally with standards codes. The characteristics finding out biological, chemical and bacteriological analysis were conducted to analysis were conducted to investigate water quality.

III. CONCLUSION

1) Water sample in water treatment plant are within the range of guidelines.

2) The increasing the DO contain in water to remove the desirable gases present in the water, it containing the proper working of aeration units.

3) Performance of process of coagulation was very poor due the addition of poly aluminium chloride (PAC) should not use required amount to be needed. The finalized the doses of PAC due to the proper working of units.

4) Prechlorination and Post chlorination is necessary to safe drinking water, chlorination is the most commonly used disinfection method in drinking water treatment plants, the chlorine is used to kill pathogen and oxidises iron and taste and odour maintain in water.

REFERENCES


