



**A.Y.DADABHAI TECHNICAL INSTITUTE, KOSAMBA
DEPARTMENT OF CIVIL ENGINEERING**



**A DETAIL REPORT ON
EDUCATIONAL VISIT**

at

“Sewage treatment plant”

30th September- 2022

PLACE: BHESAN, SURAT



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5thSem (Batch-2020)**

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ACKNOWLEDGEMENT

We are gladly thankful to Director Mr. M. M. Dalchawal Sir as well as I/C ~~Head~~ of the Departments Mr.M.J.Parmar and our faculties who gave to students a great guidance regarding training. So we decided to take students for visit to Sewage treatment plant which is situated at Bhat Gam village Bhesan taluka.

We are especially thankful to Ms. Sonali Rana medam, in charge officer of water treatment plant because she granted us permission for taking visit at treatment plant and gave the proper guidance to students and allow visiting for the practical based approach learning to students.

GENERAL INFORMATION

The waste water treatment plant is set up by Jetpur Dyeing and Printing Association which is called a Common Effluent Treatment Plant [CETP] at Bhat Gam Bhesan Taluka, Gujarat, India. The association has set up a common effluent treatment plant to treat the effluent arising from around 200 washing Ghats. The total cost of these textile industries project was Rs. 3 Millions and the plant was successfully commissioned to give treated effluent BOD < 100 mg/L. The CETP consisting of physico-chemical treatment is designed and commissioned by CA to treat 2000 cum/day of effluent with inlet BOD 180 mg/L.

PURPOSE OF VISIT

The main agenda for arranging this visit was to enhance the practical and field knowledge of the students, to relate the theoretical concepts with real time problems and solutions, and most importantly to give them the exposure to sewage treatment plant setup wherein they are going to be eventually working as civil site engineers.

The basis of civil engineering in environment industry is wastewater treatment activities and various unit processes carried out in specialized equipment. After studying various treatment activities and unit processes in semester sixth, the visit helped students to correlate theoretical concepts with large scale water treatment works. The waste water deals with the treatment of various types of waste water, sludge, inert materials, composting, energy generation by methane gas, material management and application of treatment equipment and safety precautions. These activities are formed under supervision of environmental engineer, plant engineer and laboratory contractors. During visit, students have visited the treatment plant design, design components and operation of equipment manuals and drawings where-in both professors and plant supervisor helped them to understand the same in depth.

WHAT WE LEARN?

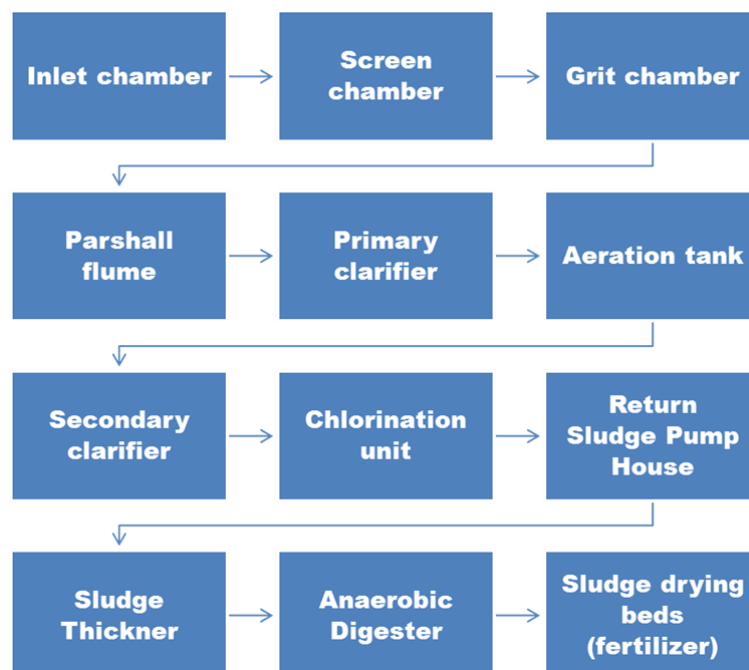
On 30th September-2022, at 10:30 A.M. we reached at common effluent treatment plant at Bhat Gam. The visit started from the initial tank where the waste water of washing Ghats is collected.



Ms. Sonali Rana, the in charge officer of water treatment plant guided all the students about the entire process of water treatment plant

About 100 MLD conventional treatment plant

Bhesan 100 MLD sewage treatment plant is passed through various unit operation and process, which are shown as under.



Screening

First unit of water treatment plant is screening, this is first step in wastewater treatment process. Screening involves the removal of large objects for example cotton buds, plastics, diapers, rags, sanitary items, face wipes, broken bottles or bottle tops that in one way or another may damage the equipment.



Primary Treatment

This process involves the separation of macrobiotic solid matter from the wastewater. Primary treatment is done by pouring the wastewater into big tanks for the solid matter to settle at the surface of the tanks which is removed by large scrappers at the center of the cylindrical tanks. The remaining water is then pumped for secondary treatment.



Secondary Treatment

The next step of the treatment process is secondary clarifier. The water from the Primary tank is transported to the secondary clarifier for adding chemicals such as Lime and alum to reduce the PH of water.



Aeration Tank

The settled wastewater enters aeration tanks where air is blown into the liquid to provide oxygen for mixing and to promote the growth of micro-organisms. Some of this sludge is recycled to the inlet of the aeration tank to maintain the biomass, hence the name for the process activated sludge. The remainder is pumped to anaerobic digester for further treatment.



Disinfection unit

The next steps for wastewater treatment plants use disinfection for treatment to reduce pathogens, which are micro-organisms which can pose a risk to human health.



Sludge Digestion

Now again to remove the sludge particles the water is passed through the belt filter press. The purified water is obtained by chemically treating the water coming out of the belt filter press. In which Chlorine is usually dosed into the treated wastewater stream for disinfection.



“SMC plants are service departments but not profit making organization”

CONCLUSION

From this visit, we get the information and practical knowledge about the treatment of waste water and components used in treatment plant. And got the knowledge about detailed process of treatment.

The acknowledgement would remain incomplete without the mentioning the gratitude to SMC officer Mr. Ketan Mehta, who made this visit successful by sharing their wealth of experience and knowledge with our students. Department would also like to appreciate Dr. D.V.Patel sir and the management of AYDTI, KOSAMBA for permitting us for Sewage Treatment visit at the plant of SMC.

Thank You