



NARAYANA ENGINEERING COLLEGE

(An ISO 9001:2015 Certified Institution, Approved by AICTE New Delhi & Permanently Affiliated to JNTUA, Ananthapuramu)

Dhurjati Nagar, Gudur-524101, SPSR Nellore District, Andhra Pradesh



Department of Civil Engineering

“A visit at Sewage treatment plant”

23rd December 2021



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ACKNOWLEDGEMENT

We are gladly thankful to Sri. T. Mohan the Superintendent Engineer and Sri. SK. Rahmath Jani, Executive Engineer from Public Health and Municipal Corporation Nellore, 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 Allipuram, Nellore Rural Mandal. We are especially thankful to Mr. Abhilash, Operations Engineer, L & T, the in charge officer of Sewage treatment plant because he granted us permission for taking visit at treatment plant and gave the proper guidance to students and allow to visit for the practical based approach learning to students.

GENERAL INFORMATION

The Sewage treatment plant is set up by L & T under Public Health and Municipal Corporation of Nellore at Allipuram, Nellore, A.P. The association has set up a Sewage treatment plant to treat the Sewage arising from around 55 MLD from Nellore Town. The plant was successfully commissioned to give treated effluent BOD < 100 mg/L. The STP consisting of physico-chemical treatment is designed.

PURPOSE OF VISIT

Our main purpose for this visit was to give the practical knowledge about Sewage treatment plant process. By this visit students can be familiar with industrial environment and get knowledge of different units of waste water treatment plant. Also in 6th& 7th semester subject like Water and waste water Engineering requires knowledge about how components of sewage plant are constructed, so it is very much convenient to see all the practical and components in real time work environment.

WHAT WE LEARN?

On 23rd December, 2021 at 11:30 A.M. we reached at Sewage treatment plant at Allipuram. The visit started from the initial tank where the waste water of Nellore Municipal Corporation is collected.

Mr. Abhilash, the in-charge officer of Sewage treatment plant guided all the students about the entire process of Sewage treatment plant.



in-charge officer guiding the students

Screening

First unit of Sewage 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..



Aeration Tank



Students observing the Treatment Process.



Students observing the Treatment Process.



Students observing the Treatment Process.

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.



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.

Thank You