

Pollution module assignment



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Water treatment is the removal of harmful pollutants in the water so that it can be used domestically and agriculturally. It is conducted through the use of chemical, biological and physical processes. Wastewater treatment enables the recycling of water so that it can be used for various uses. Secondary water treatment method involves the removal of fine and dissolved wastes that are organic by the use of a biological process of treating water.

The common approaches to biological water treatment process are the activated ledge and trickling filter. Activated sludge through the aeration of the mixture of microorganisms, which are also referred to as biological sludge, and wastewater. The microorganisms are subjected under an environment that facilitates their growth (Nearby, 2009). The wastewater is continuously run into the aeration tank so that the provision of oxygen is enabled. Through the provision of oxygen, the microorganisms are in a position to break down the pollutants that are organic.

In the end, the activated sludge remains in the bottom. The sludge that is in excess is removed and put into disposal. The other approach is the trickling filters that uses a bed of stones, or the plastic material that is perforated. Oxygen is picked up by the waste water and gets sprayed through the filter so that it can pass through the micro organisms . The organic materials present in the waste water are fed on by the micro- organisms due to the high amounts of oxygen.

These methods bring together aerobic micro -organisms, oxygen and organic matter. Biological oxidation takes place in the water treatment system, other

than in the lake or in a stream when the organic wastes are discarded there. The tertiary water treatment has many processes that include; removal of nutrient, which include Nitrogen and Phosphorous, and toxic materials removal. Tertiary treatment process combines physical and chemical treatment; however, there are still biological treatments that remove Nitrogen and Phosphorous.

Water is pumped through carbon filters that are activated. Charcoal is activated carbon that has been treated so that it can increase the chemical bonding potential. It is after this filtration that Nitrogen and Phosphorous are removed. However, the water has to pass through chemical treatment that is specialized in order to remove some chemical pollutants. An example of the pollutants is hexavalent chromium, which is toxic and can lead to cancer.

Reclaimed water is water that has been treated. This water can be used for irrigation, generation of power, controlling dust, recharging of aquifer, cooling in some of the industrial process and restoration of the natural system. This water cannot be used for drinking cooking, swimming and irrigating vegetables. This water is beneficial because its cost is low compared to the water used for drinking. Reclaimed water reduces the use of fertilizer because Phosphorous and Nitrogen remain (Nearby, 2009). To ensure that should reclaimed water is safely used, people should become extremely aware of the hazards that may result from reclaimed water.

Upon known knowing the hazard, the people should adopt strategies that are in order to manage the prevailing hazards. Would recommend tertiary water treatment because it removes pollutants such as hexavalent chromium that

is harmful to the human health and the natural environment. Tertiary water treatment is the final treatment of water and hence it is the safest method.