

Good example of sewage disposal in america research paper

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America disposes waste by treating sewage. Treatment of sewage involves the separation of waste water from contaminants. Chemical, physical, and biological processes are used in the treatment of sewage. Sewage treatment is performed so as to create a safe environment. Effluent is treated so as to avoid streams of unsafe sewage in the environment. The solid waste is also treated so as to make it possible to reuse it as fertilizer or to enable safe disposal. Sewage treatment is carried out in the US by sewage disposal factories. Some of these sewage disposal factories include Stickney Water Reclamation Plant, Deer Island Sewage Treatment Plant, Detroit Wastewater Treatment Plant, and Hyperion Sewage Treatment Plant (ENR, 2014)

In the year 1940, some of the large cities in the US disposed their untreated sewage into rivers, lakes, or harbors. Some of these cities included Pittsburgh, Boston, St. Louis, Cincinnati, and Kansas City. New York City could only manage to treat a quarter of the sewage it collected (Huler, 2010). The environment was not safe because the untreated sewage was disposed into rivers, lakes, or harbors. It created health issues such as diseases caused by dirty water. The sewage disposal factories were, therefore, developed so as to enable treatment of sewage with the view of making the environment safe.

People living in urban areas are many and closely packed together. The sewage produced in such areas is more than that produced in the countryside. Therefore, there is a lot of sewage that requires treatment in the urban areas. Sewer systems are constructed so as to enable the collection of sewage from all the houses in the city (Brain, 2014). The sewage is then taken to a sewage treatment factory for treatment purposes.

The sewer systems can be powered by gravity to enable the flow of sewage. In ideal circumstances, the sewer systems can be powered completely by gravity (Brain, 2014). In most situations gravity is used together with other methods to influence the flow of sewage. The sewage pipes in each of the houses connect to a sewer main. These pipes drain the sewage from these houses into the sewer main (Brain, 2014). There is usually a vertical pipe that connects the sewer main to the surface. The sewers are covered with manhole covers. Manholes are created so as to allow for maintenance of the sewer main.

The sewage flows from the sewer mains into large pipes that guide the sewage towards the sewage treatment plant. Most sewage treatment plants rely on gravity to collect the untreated sewage. Therefore, they are located in places that lie low. The sewer mains and pipes follow a direction that lead downwards to the sewage treatment plant. The landscape does not always make it easy for gravity to influence the flow of the sewage. In such scenarios, lift stations and grinder-pumps are added to the sewer system so as to enable the sewage to move uphill (Brain, 2014).

The sewage undergoes three stages of treatment at the sewage treatment plant. The three stages include primary treatment, secondary treatment, and tertiary treatment (Brain, 2014). The first stage is the primary stage and it involves separating the solids from the liquids. The secondary stage is the second stage and it involves the removal of micro-organisms from the water. Tertiary treatment is the last stage and it involves the use of chemicals to disinfect the water before releasing it to the environment. All plants do not carry out the three stages of sewage treatment. The degree of sophistication

of these sewage treatment plants is what determines whether all the three stages will be performed (Brain, 2014).

The primary treatment of sewage involves allowing the heavy solids in the sewage to settle at the bottom of the tank while the light solids float at the top. The solids are then collected and disposed in incinerators or landfills (Brain, 2014). The primary treatment is a stage that involves screening of the sewage, and allowing the sewage to sit in ponds so as to let the solids settle. The primary stage help in the removal of about half of the solids and materials contained in the sewage. The sewage treatment plant can decide to end the process here by chlorinating the water. The other alternative is to move forward to the secondary stage.

The secondary treatment stage involves the removal of nutrients and organic materials. The process is done using bacteria. The sewage water is taken to large tanks that are aerated. These tanks give bacteria the opportunity to consume all the organic materials that are in the water. The water is then taken to tanks so as to allow for bacteria to settle. The secondary treatment stage enables the removal of 90% of the organic materials and solids in the sewage water (Brain, 2014).

The tertiary treatment stage involves the usage of chemicals in the removal of nitrogen and phosphorous from the water (Brain, 2014). Sewage treatment plants use this method depending on the components of the sewage. The tertiary stage contains various types of treatment including filter beds. Any bacteria that is left in the water is killed by using Chlorine. The water is then discharged to the environment.

Sewage treatment is beneficial to the economy of America. America is able

to prevent the outbreak of diseases such as Cholera because of having a safe environment. Prevention of such diseases enables the country to save on costs that would have occurred in the treatment of the diseases. Sewage treatment factories also offer employment opportunities to the Americans. The economy of America is made better because people are employed, and they can provide for their families.

References

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