Is this Water Recycled Sewage?

**Directions:**  *Before reading*, in the first column, write “A” or “D” indicating your agreement or disagreement with each statement. As you read, compare your opinions with information from the article. In the space under each statement, cite information from the article that supports or refutes your original ideas.

|  |  |  |
| --- | --- | --- |
| **Me** | **Text** | **Statement** |
|  |  | 1. Wastewater treatment plants remove bacteria and viruses.
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|  |  | 1. The first stage of wastewater treatment is based on physical properties of waste material, including solubility and density of the waste material.
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|  |  | 1. Bacteria are detrimental in all stages of the wastewater treatment process.
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|  |  | 1. The denitrification process removes only nitrogen compounds from the wastewater.
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|  |  | 1. Salts can be removed from wastewater by reverse osmosis.
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|  |  | 1. Red pipes are used internationally to identify recycled water.
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|  |  | 1. Recycled water has been used to re-supply dried-up geysers.
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|  |  | 1. There are some drawbacks to using chlorine to disinfect water.
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|  |  | 1. We have been able to keep recycled wastewater out of all major bodies of water in the United States.
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**Directions:**  As you read, please complete the chart below describing the steps for recycling wastewater.

|  |  |  |
| --- | --- | --- |
| **Step & Name** | **Description** | **Chemical Explanation** |
| 1. |  |  |
| 2. |  |  |
| 3. |  |  |
| 4. |  |  |

**Sewage: The Hottest New Resource?**

* 1. What are the different sources or constituents of wastewater (sewage) that leave a home?
	2. What are the four stages of wastewater treatment?
	3. What three properties of waste material in sewage allow for separation in the physical treatment stage?
	4. What are the three steps used by bacteria to convert nitrogen-containing compounds into free nitrogen gas (N2) that escapes into the atmosphere?
	5. What uses are made of non-potable wastewater that has undergone final treatment?
	6. How is non-potable wastewater used to generate electricity?
	7. What is reverse osmosis as used in the treatment of disinfected effluent?
	8. What is removed from disinfected effluent using reverse osmosis?
	9. What is meant by “recharging” through the use of sanitized (disinfected) effluent?
	10. What is one of the drawbacks in using chlorine as a disinfectant for wastewater treatment?