

Science Time

Program Content for September 9, 2015

Read the article “Purified wastewater triggers release of arsenic, study says” on page A2 of the Sunday, September 6, 2015 edition of The Seattle Times.

Pre-reading and Vocabulary: Define each term and then use it in a sentence to demonstrate your understanding.

1. sewage
2. potable
3. aquifer
4. percolated
5. sediment

Comprehension Questions

1. What is one problem that occurs when sewage is turned into tap water?
2. What did a recent study find out about highly purified wastewater in the Orange County aquifer?
3. What is the arsenic concentration drinking-water limit?
4. What is the main cause of the problem that results in arsenic in aquifers by highly purified wastewater?
5. What is the solution to the problem in question #4?
6. Was the solution to the problem successful?
7. What is another way that arsenic can contaminate groundwater?
8. Why are potable-reuse facilities and aquifer-recharge systems necessary in the West?
9. What is arsenic and why is it dangerous?
10. How did scientists determine the reason for rising and falling levels of arsenic in Orange County's recharge system?
11. Explain the difference between what happened when natural mineral-rich water and purified water passed through clay containing arsenic.

Prompts and Extensions

1. **Read:** Learn more about the research completed by the scientists at the center of this article. Visit this [website](#) to read the abstract of the research article published last week in Environmental Science & Technology.
2. **Watch:** this [video](#) to learn about how wastewater is turned into drinkable water through Orange County's groundwater replenishment system.
3. **Discuss:** The ongoing drought in the West has caused cities and states to put restrictions on the amount of water people can use, however not everyone follows these suggestions. Engage in a discussion with your classmates about how you would ensure and incentivize more people to reduce their water usage. How would you educate people? What industries would you target? Would you make any exceptions to your suggestions?

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