

Answer Key for Environmental Geology Lab 11

1. This concept suggests that we should use resources in a responsible way not to excessively deplete them or cause environmental problem to results from their extraction and use. Sustainability not only concerns itself about the present but also future generations.
2. Slightly less than 50 years
3. Urbanization brings a host of issues such as
 - Increased flooding
 - Soil degradation from pesticides and herbicides as well as industrial pollution
 - Air quality degradation from vehicles and industry
 - Water pollution from solvents, hydrocarbons, harmful bacteria, heavy metals
4. 2040
5. 529,784
6. Yes there is. Most of the urban centers are no located where the regions aquifers are present.
7. Agricultural uses include irrigation and livestock; some applications include minor manufacturing, mining, and stream electric
8. 862 liters / day
9. 756 liters / day
10. It remains constant between 100 to 124 Gallons per day
11. By using less water for watering plants, using low appliance and more efficient plumbing that wastes less water
12. 453,000,000 liters / day
13. 432,000,000 liters / day
14. 105%
15. Desalination is very costly and there's the environmental issue of brine disposal
16. 82.9%
17. 3.7%
18. The gas flares from increase production associated with the Eagle Ford Play.

19. Carbon Dioxide, Methane, Nitrous oxide, CFC's, Water Vapor (not mentioned in lab). All these gasses absorb infrared light and warm the Earth's atmosphere

20. 2020 = 71 F 2090 = 77 F

21. about 6 F

22. Wind – Potentially viable especially if fossil fuels rise sharply. Building more turbines and infrastructure to carry the power to the population centers.

Solar – Could be used to supplement current power. At this point, efficiency and price are still not at the point where a solar system could replace conventional power especially during peak load periods. More investment in this area is needed

Fuel Cells – Has great promise. Investment should be made to make this technology commercially available

Final Exam

You are building a new city and will have to account for all the resources and geohazards that this city might face.