

WASTEWATER TREATMENT QUESTIONS. – No. 2

This is a self-test exercise and is “Open-book”. Try to answer the questions first and then look in PC Guide 3 to see if you are correct.

Answers will be made available in the near future.

1. What is the impact of a wastewater treatment works of poor, inadequate or a lack of screening of the influent wastewater?
2. What is the impact on a wastewater treatment works of poor, inadequate or a lack of grit removal?
3. What is the cause of black sludge rising in a primary sedimentation tank and what steps must be taken to cure the problem?
4. As a percentage of the inflow, what approximately would be the volume of sludge withdrawn from a primary sedimentation tank?
5. What percentage reduction (from influent to effluent) in each of the following, would you expect in a well operated primary sedimentation tank: COD; Settleable Solids; Suspended Solids?
6. What is the purpose of a humus tank on a biological filter treatment works?
7. Why is it important that a biological filter not become dry?
8. What is one method of preventing a biological filter from drying out?
9. What is the syphon feed on a biological filter?
10. Must a biological filter treatment works always have primary sedimentation?
11. What does activated sludge consist of?
12. Why is returned activated sludge necessary?
13. If the 30 minutes settling test of the mixed liquor gave a reading of 800 mls; would you repeat the test and if so how?
14. Must an activated sludge works always have a primary sedimentation tank?

15. What is a typical range of suspended solids in the reactor (aeration tank)?
16. What is Sludge Age (Solids Retention Time)?
17. How is sludge age measured?
18. What is a typical range for sludge age in a conventional activated sludge works?
19. Was it necessary to remove some activated sludge from the system at regular intervals?
20. What is Nitrification?
21. What is De-nitrification?
22. If the dissolved oxygen content of the reactor (aeration tank) suddenly rises for no apparent reason; should one be concerned and why?
23. In the above example which two tests do you consider to be the most important to do following such an incident:
24. If one notices gas bubbles rising in the secondary sedimentation tank and lifting sludge – what are the bubbles and what is causing it?
25. What steps would you take to resolve the problem?
26. In a Rotating Disc Unit (Bio-disc); is it necessary to desludge the septic tank? If so, why?
27. In anaerobic digestion; is pH a reliable parameter to rely on? If not, why?
28. Why is the Volatile Acid to Alkalinity ratio important?
29. What is the main danger of digester gas?
30. Why is sludge dewatered? Name a few methods.

KEEP LEARNING.