Operator Quiz Test No. 113 – Potpourri

The following questions are designed for trainees as they prepare to take the ABC wastewater operator test. It is also designed for existing operators to test their knowledge. Each issue of *Clear Waters* will have more questions from a different section of wastewater treatment. Good luck!

1. Which of the following digester conditions would have the most potential to result in low quality supernatant?:
   a. Feed sludge point is too close to the supernatant draw-off point
   b. Regular sludge withdrawal
   c. Digester gas monometer readings equaling the digester gas compressor controller set point
   d. Maintaining digester temperature of 98°F

2. Sludge conditioning in a centrifuge is regulated by all of the following except:
   a. Sludge feed rate
   b. Bowl speed
   c. Polymer dosing rate
   d. Conveyor belt speed

3. Step-Feed aeration is most accurately described as:
   a. A process using digested sludge to maintain nutrient balances
   b. A process that uses one tank for reaeration and for treating primary effluent
   c. A process that allows a slug of primary effluent to pass through a tank without mixing with other primary effluent entering the tank
   d. A process that adds primary effluent at several locations along the length of an aeration tank

4. Calculate the food to mass ratio with the following data:
   Aeration tank influent flow 2.0 MGD
   Aeration tank influent BOD 100 mg/l
   Aeration tank size 15'x30'x100'
   MLVSS 2,000 mg/l
   a. 0.3
   b. 0.6
   c. 0.15
   d. 0.08

5. A bar screen exhibits a large difference in upstream and downstream channel levels. This is most likely attributed to:
   a. High grit levels in the channel
   b. Blinding
   c. Lower than average water flows
   d. Higher than average water flows

6. Given the following information, calculate the total flow in gallons after 1-minute of flowing through this channel. Assume the channel is rectangular and full.
   Channel Width: 5.0'
   Channel Depth: 2.0'
   Velocity: 3.5 ft/sec
   a. 2,100 gal
   b. 292 gal
   c. 15,700 gal
   d. 17,520 gal

7. Detritus in wastewater can best be described as:
   a. Sludge
   b. Grit
   c. F.O.G
   d. Struvite

8. Which of the following statements is correct?:
   a. 1 HP-hour is equal to 0.746 kW-hour
   b. 1 cubic foot is equal to 8.34 gallons
   c. 100 ml is equal to 1 liter
   d. 1400 minutes is equal to 1 day

9. What is the detention time of a round secondary clarifier with a depth of 12 feet, a diameter of 130 feet and an influent flow of 11.25 MGD?:
   a. 1.5 hours
   b. 0.3 hours
   c. 2.5 hours
   d. 0.7 hours

10. The logarithm of the reciprocal of hydrogen ion activity can best be represented by:
    a. pH
    b. H^-
    c. H°
    d. PSI

Answers from page 61: 1 A, 2 D, 3 D, 4 A, 5 B, 6 C, 7 B, 8 A, 9 C, 10 A

For those who have questions concerning operator certification requirements and scheduling, please contact Tanya May Jennings at 315-422-7811 ext. 4, tmj@nywea.org, or visit www.nywea.org/OpCert.