



Certification Boulevard

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Test Your Knowledge of Stormwater Management & Other Treatment Topics

- A well-constructed and maintained stormwater management program consists of a sampling program and which other components?
 - _____
 - _____
 - _____
- True or False:** Best Management Practices (BMPs) are those practices oriented toward common industrial activities to reduce and/or eliminate stormwater pollutants.
- Which effluent quality condition may cause the most efficiency problems with a UV disinfection process?

A. High NH ₃	B. High NO ₃
C. High TSS	D. High NO ₂
- What is the term when NH₃, NO₃ and NO₂ are added together?

A. TN	B. SON
C. NO _x	D. TIN
- Which of the following items can be considered stormwater?
 - Storm runoff
 - Snow-melt runoff
 - Drainage
 - All of the above
- Given the following data, what is the capacity of this stormwater retention pond?
 - 120 feet long
 - 45 feet wide
 - 4 feet deep

A. 21,600 gals	B. 0.161568 mg
C. 180,144 gpd	D. 1.0 mg
- True or False:** One important component of an effective stormwater management program is ensuring that each facility employee understands the on-site stormwater drainage system.
- Which type of sewer system contains both sanitary wastewater and stormwater?
 - Domestic wastewater system
 - Combined sewer system
 - Separate collection system
 - Stormwater system
- What is the detention time of a chlorine contact chamber that is 100 feet long, 25 feet wide, and 10 feet deep, and has a plant flow rate of 5.5 mgd?
 - About 2 hours
 - About 76 minutes
 - About 49 minutes
 - About 15 minutes
- Which chemical is more commonly used to dechlorinate chlorinated effluent?
 - Sodium hypochlorite
 - Bleach
 - Sulfur dioxide
 - Ferric chloride

ANSWERS ON PAGE XX

SEND US YOUR QUESTIONS FOR CERTIFICATION BOULEVARD

Do you have a question or an exercise you would like to feature in "Certification Boulevard?" We'll be glad to publish it. Just send your question (with the answer) or your exercise (with the solution) to:

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There is no limit to the number of questions or exercises you may submit. Please include your name, city, and organization or company so we can give you credit.

Certification Boulevard Answer Key

From page xx

1. A. Pollution Prevention Plan
B. Periodic Inspections
C. Employee Training

2. True
Best Management Practices (BMPs) are those practices oriented toward common industrial activities to reduce and/or eliminate stormwater pollutants.

3. C. High TSS

4. D. TIN
TIN, or Total Inorganic Nitrogen, is the combination of those forms of nitrogen that are inorganic in nature. Basically, TIN is the combination of all forms of nitrogen except Organic-N.

5. D. All of the above

6. B. 0.161568 mg
 $120 \text{ ft} \times 45 \text{ ft} \times 4 \text{ ft}$
 $= 21,600 \text{ ft}^3 \times 7.48 \text{ gal/ft}^3$
 $= 161,568 \text{ gals} \div 1,000,000$
 $= 0.161568 \text{ mg}$

7. True
One important component of an effective stormwater management program is ensuring that each facility employee understands the on-site stormwater drainage system.

8. B. Combined sewer system

9. C. About 49 minutes
Detention time is V/Q . "V" is the volume of the tank, and "Q" is the flow entering the tank. To calculate detention time directly in minutes, the formula is: tank volume in ft^3 divided by flow in mgd times 92.84 cfm per mgd. It looks like this:

$$\begin{aligned} &\text{Detention Time (min.)} \\ &= (\text{Tank Volume } \text{ft}^3) \div (\text{Flow, mgd} \times 92.84 \\ &\quad \text{cfm/mgd}) \\ &= (100 \text{ ft} \times 25 \text{ ft} \times 10 \text{ ft}) \div (5.5 \text{ mgd} \times 92.84 \\ &\quad \text{cfm/mgd}) \\ &= 25,000 \text{ ft}^3 \div 510.62 \text{ cfm} \\ &= 48.9 \text{ minutes} \end{aligned}$$

10. C. Sulfur dioxide
Sulfur dioxide is the only chemical on this list that will effectively dechlorinate chlorinated effluent. Other chemicals used for dechlorination are sodium thiosulfate and sodium bisulfite.

